



The Water Report™

Water Rights, Water Quality & Water Solutions in the West

In This Issue:

PFAS 1

**Colorado River Basin
Drought Plan 11**

***Texas versus
New Mexico
& Colorado 17***

Water Briefs

Calendar

Upcoming Stories:

**Army Corps
Section 408 Guidelines**

**Western
Water Markets**

**California
Natural Resources
Director Interview**

& More!

PFAS: A PRIMER

THE STATE-OF-PLAY AND POSSIBLE SITE REMEDIATION AND LITIGATION IMPACTS

by Jeff Kray and Sarah Wightman, Marten Law (Seattle, WA)

Introduction

Polyfluorinated and perfluorinated substances, more commonly known as PFASs, are gaining attention in the media as a health and environmental risk to millions of Americans.¹ PFASs are found in myriad useful products, from clothing to food packaging to building materials, and they have been found in drinking water supplies across the country at levels exceeding an EPA health advisory. Investigating and regulating PFASs have become priorities for federal and state policy makers. PFASs in the environment, including in water supplies, have triggered numerous lawsuits. This article provides a primer on PFASs history and chemistry, the response by various stakeholders, including EPA, states, water suppliers, and the courts to PFAS contamination, and the likely impacts PFASs will have on site remediation and environmental litigation for years to come.

Background

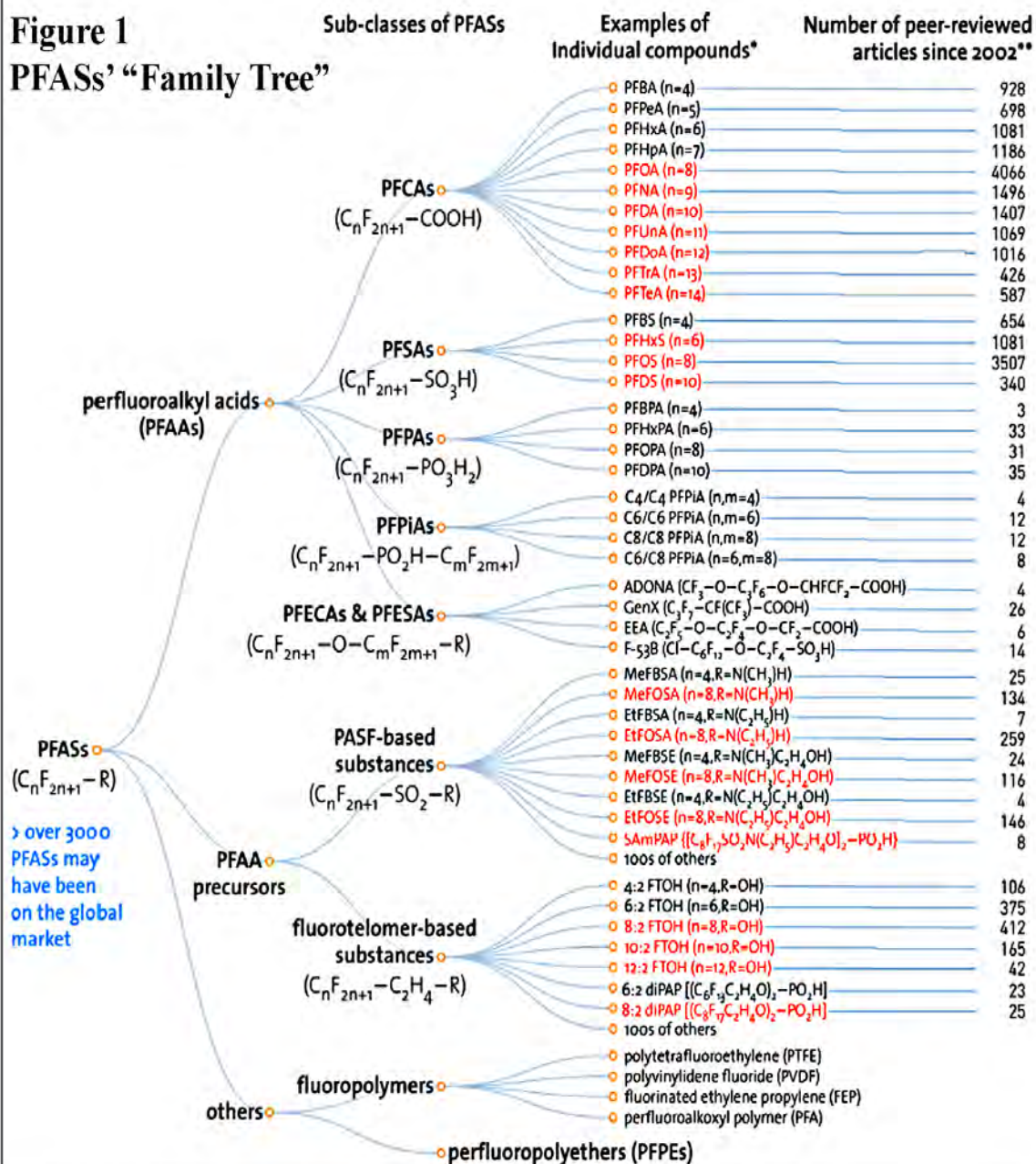
PFASs are a generic term for a family of per- and polyfluoroalkyl substances, which include perfluoroalkyl acids (PFAAs). PFASs are synthetic chemicals that have many valuable properties, including fire resistance and oil, stain, grease, and water repellency.² PFASs were first developed in the 1930s, and within 30 years could be found in firefighting foams, wire insulation, cleaners, textiles, apparel, carpet, leather, paper, and paints.³ The first PFASs developed were “long-chain” PFAS, which means they have eight or more carbon atoms.⁴ These include the two most widely known PFASs, perfluorooctanoic acid (PFOA) and perfluorooctane sulfate (PFOS). Beginning in the 2000s, companies began to develop “short-chain” PFAS, meaning they have fewer carbon atoms.⁵ GenX is one of the most well-known short-chain PFASs. So far, scientists have discovered 500 types of previously unrecorded PFAS in the past decade and have listed more than 4,500 chemical structures.⁶ See Figure 1 (page 2). Because of their widespread use and persistence (i.e., PFAAs do not appear to degrade naturally), PFASs are now found worldwide in the environment, wildlife, and humans.⁷ According to industry human biomonitoring data, PFOA is also found in the blood of the general population in all geographic regions of the United States.⁸

Environmental and Health Risks Remain Under Study

The widespread presence of PFASs, particularly in light of the extreme persistence of PFAAs, has the potential to be harmful to the environment and human health. With exposure, PFASs accumulate in the blood and liver. Because PFAAs are not metabolized, they can bioaccumulate in terrestrial food webs and in marine mammals, meaning that organisms higher in the food chain generally have higher PFAS levels than those lower in the food chain.¹⁰

PFAS

Figure 1
PFASs' "Family Tree"



* PFAS in **RED** are those that have been restricted under national/regional/global regulatory or voluntary frameworks, with or without specific exemptions (for details see OECD (2015) Risk Reduction Approaches for PFASs - <http://oe.cd/1AN>).

** The number of articles (related to all aspects of research) were retrieved from SciFinder® on Nov. 1, 2016.

Figure 1. "Family tree" of PFASs, including examples of individual PFASs and the number of peer-reviewed articles on them since 2002 (most of the studies focused on long-chain PFCAs, PFSAs and their major precursors.).

In addition to environmental impacts, studies have shown that PFASs, specifically PFOA and PFOS, are associated with adverse health effects. Peer-reviewed studies on laboratory animals and epidemiological studies of human populations indicate that exposure to PFOA and PFOS over certain levels may result in developmental effects to fetuses and infants, cancer, and impacts to the liver, thyroid, immune system, and cholesterol changes.¹¹ However, despite two decades of studies, "toxicologists are still struggling to work out exactly how PFASs cause problems in the body."¹² This is only complicated by the continuous identification of new PFAS structures, each of which may cause different harms or work in a different way.¹³

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<div data-bbox="175 174 280 212">PFAS</div> <div data-bbox="175 254 284 285">Sources</div> <div data-bbox="134 428 324 462">Water Supply</div> <div data-bbox="134 567 323 598">Known Risks</div> <div data-bbox="134 672 328 705">Military Bases</div> <div data-bbox="152 989 306 1056">Sampling Challenges</div> <div data-bbox="123 1373 337 1407">Filters Disposal</div>	<div data-bbox="376 142 719 170"> PFAS Contamination Sources </div> <div data-bbox="376 176 1520 235"> <p>To date, the two most well-characterized sources of PFAS contamination are manufacturing plants and releases of aqueous film-forming foam (AFFF) used for fuel fires.</p> </div> <div data-bbox="376 239 1524 520"> <p>Many manufacturing facilities used PFASs starting in the 1950s. For example, in Parkersburg, West Virginia, DuPont used PFOA to make Teflon for over 40 years, resulting in PFOA powder releases into the Ohio River and sludge-containing PFOA into digestion ponds near the facility. PFOA entered the local water table, contaminating drinking water for more than 100,000 people.¹⁴ Similarly, in Hoosick Falls, New York, a manufacturing plant used PFOA to make stain resistant fabric. In a personal injury suit, the plaintiff alleges that employees discharged PFOA by dumping trays of cleaning residue containing PFOA into drains, which contaminated soil, groundwater, and ultimately the town's public water supply.¹⁵ Similar drinking water contamination originating from manufacturing plants has been discovered across the country, including in Minnesota, Alabama, Vermont, New Hampshire, and New Jersey.</p> </div> <div data-bbox="376 525 1524 837"> <p>Drinking water on and around military installations and civilian airports has been contaminated with PFAS due to the use of AFFF to fight fires. Although Department of Defense (DOD) memoranda indicate that DOD knew about the possible risks of PFASs in AFFF since the early 1980s, DOD has only recently begun to investigate PFAS contamination on and near its facilities.¹⁶ In the past several years, DOD has identified over 400 active or closed installation with known or suspected releases of PFOS or PFOA.¹⁷ As of December 2016, DOD had spent at least \$200 million for investigation, remediation, and alternate water supply provisions and is projected to spend millions more to treat water and provide alternate drinking water sources.¹⁸ For example, a June 2017 Air Force Interim Feasibility Study of Eielson Air Force Base in Alaska developed seven cleanup options to address drinking water wells contaminated with PFAS ranging in cost from \$32 million to \$67 million.</p> </div> <div data-bbox="376 873 612 903"> PFAS Due Diligence </div> <div data-bbox="376 907 1523 1253"> <p>Phase 1 site investigations (see Editors' sidebar, below) may miss the potential for PFAS contamination, as these chemicals were not historically considered hazardous.¹⁹ Thoroughly understanding the historical uses of a site, along with the historical uses of PFAS, is critical to identifying potential PFAS contamination at a site.²⁰ Once soil and groundwater sampling at a site begins, it may remain difficult to identify the source of PFASs at a site, given the thousands of types of PFAS and their different changes over time and fate and transport mechanisms.²¹ In addition, many PFAS releases occurred decades ago, giving PFAS plumes time to develop.²² Further, many materials typically used for environmental sampling contain PFASs, and because many PFASs may be concerning even when only present in several parts per trillion (ppt), accurately sampling a site may be difficult.²³ Regardless of these challenges, PFASs will certainly be included in due diligence for property transactions going forward, given the growing concern surrounding these chemicals.</p> </div> <div data-bbox="376 1285 812 1316"> Developing Remediation Technologies </div> <div data-bbox="376 1318 1497 1537"> <p>Thus far, PFAS remediation projects have typically used carbon filters that can catch long-chained PFASs; however, the filters are much less effective for the short-chained substitutes.²⁴ Even after PFASs have been removed from water or soil, PFAS-laden filters must be disposed of. Currently, much of this waste ends up in landfills, but that may just be creating another problem, as PFASs from treatment filters can seep into the ground, particularly in unlined landfills.²⁵ Further research is needed to develop cost-effective destructive technologies for PFASs that result in complete mineralization, e.g., removing the fluorine atoms from the carbon atoms.²⁶</p> </div>
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Environmental Site Assessments

PHASES 1 & 2

A Phase I environmental site assessment (ESA) is a report prepared for a real estate holding that identifies potential or existing environmental contamination liabilities. The analysis typically addresses both the underlying land as well as physical improvements to the property. A Phase I ESA is generally considered the first step in the process of environmental due diligence.

Phase 1 scrutiny includes: examination of potential soil contamination; groundwater quality; surface water quality; and sometimes issues related to hazardous substance uptake by biota. The actual sampling of soil, air, groundwater, and/or building materials is typically not conducted during a Phase I ESA.

Standards for performing a Phase I site assessment have been promulgated by the US Environmental Protection Agency and are based in part on ASTM International (formerly American Society for Testing Materials (ASTM)) standards.

If a site is considered contaminated, a Phase II ESA may be conducted — a more detailed investigation involving chemical analysis for hazardous substances and/or petroleum hydrocarbons.

See: www.epa.gov/brownfields

Federal Actions

PFAS

Production Ban

Early 2000s – Self-Imposed PFOS Manufacturing Ban

In the late 1990s, EPA received information indicating that PFOS in particular was widespread in the blood of the general population and presented concerns for persistence, bioaccumulation, and toxicity.²⁷ Following discussions between EPA and 3M — the sole manufacturer of PFOS in the United States and the principal manufacturer in the world — the company terminated production of these chemicals.²⁸ In 2002 and 2007, EPA took action to limit future manufacture and importation of PFASs, particularly perfluoroalkane sulfonates (PFASs).²⁹

Stewardship

2006 – EPA Initiates PFOA Stewardship Program

In 2006, EPA invited eight companies in the PFAS industry to join a global stewardship program with the goals achieving a 95% reduction in PFOA and related emissions by 2010 and eliminating PFOA and related chemicals from emissions and products by 2015.³⁰ This program helped successfully phase out the manufacture and import of PFOA into the United States, although existing stocks of PFOA may still be used, and PFOA may still exist in imported goods.³¹

Public
Water Supply**2013-2015 – Drinking Water Testing**

The Safe Drinking Water Act (SDWA) requires that once every five years, EPA issue a new list of no more than 30 unregulated contaminants to be monitored by public water systems. Pursuant to the SDWA, in 2012 EPA published the Third Unregulated Contaminant Monitoring Rule (UCMR 3), which included PFOS and PFOA, as well as several other PFAS chemicals. UCMR 3 monitoring found that over 100 public water systems contained PFOA, and many others contained some type of PFAS.³²

Advisory Level

May 2016 – EPA Issues PFOS and PFOA Health Advisories

In May 2016, EPA established drinking water health advisories for PFO³³ and PFOS,³⁴ setting the advisory level at 70 ppt. These advisories provide technical information to state agencies and other public health officials on health effects, analytical methodologies, and treatment technologies associated with drinking water contamination. However, complying with these drinking water health advisories is not mandatory. Despite their non-binding nature, these advisories have set the first national reference points against which the public and water suppliers can evaluate potential health risks associated with PFAS-family substances.

Health Levels

May/June 2018 – ASTDR Study and EPA Planned Actions

In May 2018, EPA was criticized for blocking publication of an Agency for Toxic Substances and Disease Registry (ATSDR) study that reportedly would have shown that PFASs endanger human health at a far lower level than the EPA health advisory limits.³⁵ Faced with this criticism, former EPA Administrator Scott Pruitt announced in May 2018 several planned actions on PFASs, including:

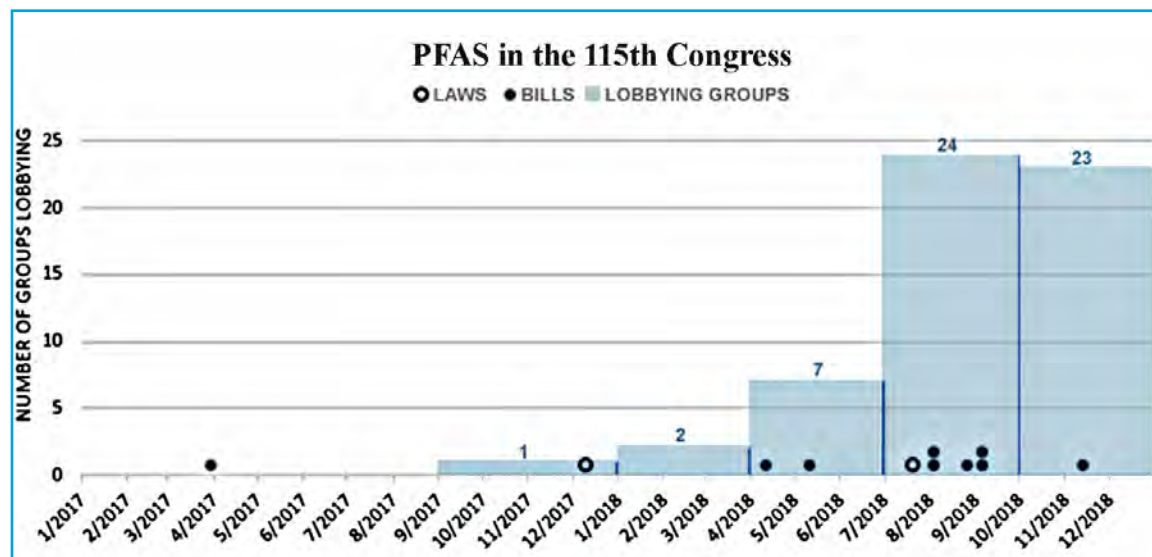
- Establishing a binding maximum contaminant level (MCL) for PFOS and PFOA “in earnest;”
- Classifying PFOA and PFOS as “hazardous substances” under CERCLA and developing groundwater cleanup levels “by the fall of this year” to guide the remediation of PFAS-contaminated sites;
- “Tak[ing] action in close collaboration with our federal and state partners to develop toxicity values for GenX and PFBS,” two other types of PFAS, “by December of this year;” and
- Visiting Michigan, New Hampshire, and other states affected by PFAS contamination to aid in drafting a “national PFAS management plan” “that will be done by the fall of this year.”³⁶

In June 2018, ATSDR released its draft toxicological profile for PFASs, which ultimately did derive toxicity values that were much more stringent than the EPA health advisory limits.³⁷ Note, however, that ATSDR’s values are specifically to be used as guidance at hazardous waste sites, not for drinking water MCLs.

Military Cleanup

August 2018 – Congress Passes Military Spending Bill with PFAS Provisions

The 2019 National Defense Authorization Act required DOD to study PFAS contamination at military bases and develop cleanup plans.³⁸ While this is the only recent federal legislation regarding PFAS to become law, Congressional interest has certainly increased in the past year alone, as reflected in Figure 2 (next page).

Figure 2. Lobbying and legislative activity on PFAS spiked at the end of last Congress.³⁹**February 2019 – EPA PFAS Management Plan**

EPA released its PFAS Management Plan on February 14, 2019.

In the plan, EPA committed to:

- Propose a national drinking water regulatory determination for PFOA and PFOS;
- Initiate the regulatory development process for listing PFOA and PFOS as CERCLA hazardous substances;
- Develop interim cleanup recommendations to address groundwater contaminated with PFOA and PFOS;
- Finalize draft toxicity assessments for additional PFASs;
- Conduct new chemical reviews under TSCA for new PFASs and issue rules for new PFAS uses until EPA determines whether the new use presents an unreasonable risk;
- Provide technical assistance and resources to improve PFAS testing and monitoring methods and to enhance treatment and remediation technologies; and
- Employ an enforcement strategy to support state and local authorities in addressing ongoing PFAS release.⁴⁰

Despite these commitments from EPA, it will likely be years before many of the substantive regulations are finalized. For example, the process of setting a drinking water MCL for specific chemical pollutants under the SDWA is a multiple step process that ordinarily takes years to complete. In addition, the SDWA stipulates that primary drinking water standards such as MCLs are to become effective three years after they are promulgated to allow water systems to adjust to the new requirements.⁴¹ However, states often seek to shorten the implementation periods for new MCLs, which in this case would result in further discrepancies in regulation at the state level and less clarity about national regulatory standards for these chemicals.

February 2019 – EPA Cites Manufacturer for PFAS Emissions Under TSCA

In February, EPA cited Chemours for failing to control PFAS emissions from plants in North Carolina and West Virginia.⁴² Among other things, the notice of violation alleges that Chemours violated the terms of a 2009 consent order that allowed the firm to use GenX chemical substances in its manufacturing process only if it recovered and captured or recycled the chemicals at a 99% efficiency rate.⁴³

February 2019 – Government Launches Study of PFAS Health Impacts Near Military Bases

Also in February, the Centers for Disease Control and Prevention (CDC) and the ATSDR announced that they will be conducting exposure assessments in communities near current or former military bases that are known to have had PFAS in their drinking water.⁴⁴ The primary goal of these exposure assessments is to provide information to communities about levels of PFAS in their bodies, but the information gathered will also be used to help inform future studies evaluating the impact of PFAS exposure on human health.⁴⁵

PFAS**Legislative Activity****EPA Plan****Implementation Delays****Terms Violated****Exposure Assessments**

State Action

PFAS

Regulations
&
LegislationVarying
StringenciesSoil &
GroundwaterState
Standards

Absent binding, enforceable regulations at the federal level, states have begun to enact their own regulations and legislation. As of this writing, at least 16 states have finalized at least 28 regulations with additional proposed rules forthcoming. (In some cases, states have issued more than one type of PFAS regulation. For example, New Jersey has issued a drinking water standard as well as a groundwater cleanup standard, as detailed below). These regulations address PFAS management issues ranging from exposure limits for drinking water, groundwater cleanup standards, hazardous waste disposal, prohibiting PFASs in products, and children's products liability.

Only New Jersey has set a binding drinking water standard for a PFAS (0.013 µg/L for perfluorononanoic acid (PFNA)).⁴⁶ However, several states have proposed binding standards, at varying degrees of stringency. For example, New Hampshire recently proposed setting a drinking water MCL of 70 ppt for PFOA and PFOS combined,⁴⁷ while New York has proposed an MCL of 10 ppt.⁴⁸ These disparities highlight the differing risk tolerances in the face of scientific uncertainty.

Many states have also issued non-binding health advisory limits or binding notification limits for drinking water. For example, California has established a notification limit of 13 ppt for PFOS and 14 ppt for PFOA.⁴⁹ When drinking water exceeds these limits, the drinking water system must notify the water system's governing body and the governing body of any local agency that has jurisdiction over the areas supplied with the impacted drinking water.⁵⁰

Several states have also finalized rules setting cleanup levels for PFASs in soil and/or groundwater, including Alaska,⁵¹ Michigan,⁵² and New Jersey.⁵³ Like drinking water standards, these cleanup standards vary and demonstrate differing risk tolerances. See Table 1, below.

Table 1. State PFAS drinking water and soil and/or groundwater cleanup standards (The Colorado standard only applies to a portion of El Paso County, near Peterson Air Force Base.)

Table 1. State PFAS Drinking Water & Soil and/or Groundwater Cleanup Standards		
State	Regulated PFAS	Standard
<i>Drinking Water Standard</i>		
New Jersey ⁵⁴	PFNA	0.013 µg/L
<i>Soil Cleanup Standards</i>		
Alaska ⁵⁵	PFOS	0.00030 mg/kg - 2.2 mg/kg
	PFOA	0.00017 mg/kg - 2.2 mg/kg
Iowa ⁵⁶	PFOS	1.8 mg/kg
	PFOA	1.2 mg/kg
Texas ⁵⁷	PFOA, PFOS, PFNA, PFBA, PFBS, PFHxS, PFHxA, PFPeA, PHFpA, PFOSA, PFDA, and PFSA	Various
Wisconsin ⁵⁸	PFOS and PFOA	1.26 mg/kg – 16.4 mg/kg
<i>Groundwater Cleanup Standards</i>		
Alaska ⁵⁹	PFOS and PFOA	0.040 µg/L
Colorado ⁶⁰	PFOS and PFOA	0.070 µg/L*
Iowa ⁶¹	PFOS	0.7 µ/L – 1.0 µg/L
	PFOA	0.7 µg/L
Michigan ⁶²	PFOS and PFOA	0.070 µg/L
New Hampshire ⁶³	PFOS and PFOA	0.070 µg/L
New Jersey ⁶⁴	PFNA	0.013 µg/L
North Carolina ⁶⁵	PFOA	2 µg/L
Rhode Island ⁶⁶	PFOS and PFOA (total)	0.070 µg/L
Vermont ⁶⁷	PFOS, PFOA, PFHxS, PFHfA, and PFNA (total)	0.02 µg/L

<div data-bbox="175 176 280 214">PFAS</div> <div data-bbox="162 254 297 323">Warnings Required</div> <div data-bbox="147 430 311 459">Restrictions</div> <div data-bbox="133 709 326 743">Legal Options</div> <div data-bbox="147 1024 311 1054">Teflon Case</div> <div data-bbox="123 1304 337 1337">Drinking Water</div> <div data-bbox="168 1583 293 1688">Cleanup & Damages</div> <div data-bbox="157 1829 305 1894">Minnesota Settlement</div>	<p>States have also begun to regulate PFAS in products. In November 2017, California listed PFOA and PFOS on the Proposition 65 list due to their developmental toxicity. As of November 2018, businesses in California have been required to provide a “clear and reasonable” warning before knowingly and intentionally exposing anyone to PFOA or PFOS.⁶⁸ Similarly, Washington’s Children’s Safe Products Reporting Rule requires manufacturers to report annually to the Washington State Department of Ecology (Ecology) the presence of PFOS and PFOA in children’s products offered for sale in Washington.⁶⁹ In addition, the Washington state legislature has directed Ecology to publish the findings of an alternatives assessment that evaluates PFAS replacements for food packaging made from paper or other plant fibers by January 2020. After January 2022, PFAS may not be added to food packaging made from paper or other plant fibers if the alternatives assessment identifies multiple safer alternatives that meet certain requirements. Finally, both New York and Washington have placed restrictions on the sale and use of firefighting foam containing PFOA or PFOS.⁷⁰</p> <p style="text-align: center;">Litigation</p> <p>Because federal and state standards do not yet comprehensively provide relief for those impacted by PFAS contamination, many have turned to litigation. The status of PFAS regulation under federal and state laws differs and is in many cases unclear; therefore, relatively straightforward cost recovery claims under CERCLA or state law equivalents are not yet always available. This has prompted litigation under other common law or statutory schemes, including torts such as trespass, negligence, and nuisance. In addition, because PFAS contamination is particularly an issue near military installations, plaintiffs may begin to bring constitutional takings claims or claims under the Federal Tort Claims Act. There are currently over 60 cases filed within the US related to PFAS, covering a wide range of claims.</p> <p>Toxic Tort Cases</p> <p>One of the first lawsuits dealing with PFAS focused on the potential harm to human health caused by these chemicals. In Parkersburg, West Virginia, DuPont used PFOA to make Teflon for over 40 years. At this facility, DuPont released PFOA into the air from facility emissions, PFOA powder and waste water into the Ohio River, and sludge containing PFOA into digestion ponds near the facility. PFOA entered the local water table, contaminating drinking water for more than 100,000 people.⁷¹ The plaintiffs in that case claimed injuries such as kidney cancer, testicular cancer, and thyroid disease resulting from drinking water contaminated by PFOA from DuPont’s manufacturing facilities. In February 2017, DuPont reached a \$671 million settlement with approximately 3,500 plaintiffs in Parkersburg.⁷²</p> <p>Suits by Drinking Water Providers</p> <p>Claims have also been brought by municipalities and drinking water providers against entities that caused contamination at a particular site. For example, several public water providers have sued manufacturing facilities contaminating their water supplies with PFAS;⁷³ a Massachusetts town has reached a settlement in a lawsuit against a local fire training academy for PFAS contamination of drinking water;⁷⁴ and Newburgh, New York and Martinsburg, West Virginia have both taken steps to sue the United States for alleged PFAS contamination stemming from military operations.⁷⁵</p> <p>State Litigation</p> <p>States have begun to bring suits to recover cleanup costs and natural resource damages caused by PFAS contamination.</p> <p>For example, in February 2018, the State of Minnesota and 3M Company (3M) entered into an agreement settling the State’s claims against 3M for contaminating the State’s natural resources by releasing PFAS into the environment.⁷⁶ For decades, 3M manufactured PFOS, PFOA, and other PFASs at facilities in the Twin Cities metropolitan area.⁷⁷ In the State’s lawsuit, it alleged that 3M disposed of wastes containing PFASs at dedicated disposal sites, landfills, and unlined dumps, ultimately resulting in the contamination of four major drinking water aquifers supplying the sole source of drinking water for 125,000 residents.⁷⁸ The State brought claims against 3M under the Minnesota Environmental Response and Liability Act; the Minnesota Water Pollution Control Act; and various tort theories, including trespass, nuisance, and negligence. Under the settlement agreement,⁷⁹ 3M will pay \$850 million to Minnesota through the 3M Grant for Water Quality and Sustainability Fund, which will fund a variety of water quality projects in the Twin Cities such as developing alternative water supplies; treating existing water supplies; and water conservation and efficiency projects.</p>
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PFAS**Punitive
Damages****Defendant
Consolidation****Firefighting
Foams****Federal Sites****State
Authority?****Enforcement
Injunction**

In another example, the State of New York is suing six manufacturers of PFAS-containing firefighting foam to recover the cost of cleaning up environmental contamination caused by the use of that firefighting foam.⁸⁰ In its suit, filed on June 20, 2018 in New York state court, New York seeks more than \$38.8 million plus punitive damages. New York claims, among other things, that the manufacturers knew, or should have known, that their products containing PFOA and/or PFOS, when used as intended, would likely injure and/or threaten public health and the environment.⁸¹

Multi-District Litigation

The increased national interest in PFAS has resulted in proliferating suits across the country, with more likely to come. One main way that a defendant can regain control over an expanding liability landscape is by consolidating multiple cases into a Multi-District Litigation, or MDL.⁸² While arguably the consolidation only consolidates the pre-trial proceedings (the cases are remanded to the original court for trial), an MDL's practical effect is to narrow discovery and provide a single consolidated venue to evaluate and (often) settle all current and future claims, such as in the asbestos products liability litigation and mega-settlement.⁸³

As more and more tort cases are brought against manufacturers nationwide, they are ripe for MDL treatment. In December 2018, the Judicial Panel on Multi-District Litigation, at the request of defendants Tyco Fire Products, Chemguard, 3M, and others, consolidated 75 personal injury cases pending in courts across the country into a single MDL, *In re: Aqueous Film-Forming Foams Products Liability*.⁸⁴ This MDL includes all cases in which plaintiffs allege harm caused by the defendants from groundwater contamination due to the manufacture and use of PFAS-containing firefighting foams. This MDL is therefore likely to sweep in other emerging claims such as class action torts and products liability claims against firefighting foam manufacturers as additional contamination is found.

State/Federal Conflict

An interesting recent development in the State of New Mexico signals possible conflict between states and the federal government, as states seek to protect their water supplies, while the United States and DOD seek to minimize their liability for PFAS contamination at and from military and other federal sites.

New Mexico has been seeking to compel the US Air Force (Air Force) to address PFAS contamination at military bases in that state. The United States — potentially as a test case to limit state regulation — is fighting back. On January 17, 2019, the United States filed a complaint on behalf of the Air Force seeking to invalidate a permit that the State of New Mexico issued to Cannon Air Force base under the New Mexico Hazardous Waste Act.⁸⁵ The United States claims that, by including PFOS and PFOA in the definition of “hazardous waste,” subject to corrective action in the Air Force Base’s permit, the State of New Mexico acted outside the scope of its authority under the federal Resource Conservation and Recovery Act. The Air Force’s complaint also states that enforcement of the permit conditions relating to PFAS is barred by sovereign immunity (because these compounds are outside of the scope of the federal waiver).⁸⁶

This injunctive suit has not, however, discouraged the state’s enforcement efforts. On February 6, 2019, the New Mexico Environment Department issued a Notice of Violation to Holloman Air Force Base for groundwater contamination with PFOA and PFOS, in violation of state water quality standards.⁸⁷ Then, on March 5, 2019, New Mexico filed a lawsuit of its own against the United States, alleging that the Air Force violated New Mexico’s hazardous waste act by failing to address previous use of the chemicals.⁸⁸ New Mexico seeks, among other things, injunctive relief to remediate the PFAS contamination.⁸⁹

Conclusion

As scientists and regulatory agencies assess potential risks and regulatory strategies and states and drinking water providers increase testing for emerging contaminants, it is evident that PFASs and the environmental issues associated with these chemicals are here to stay. Federal and state regulators’ slow progress toward designating PFASs as hazardous, promulgating binding cleanup and drinking water standards, and regulating the sources of these contaminants has created confusion for water suppliers, landowners, manufacturers, and the public. Until clear and binding regulations are in place, parties will likely turn toward complex and expensive litigation to address the sources of PFAS contamination, seek remedies to correct PFAS impacts, and recover costs from responsible parties.

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Jeff Kray is a partner and **Sara Wightman** is an associate at Marten Law PLLC. They represent several municipalities and water districts in addressing liability and remediation issues arising from PFAS contamination.

Footnotes

- 1) See e.g., Nadia Kounang, *What are PFAS Chemicals, and What are They Doing to Our Health?*, CNN, www.cnn.com/2019/02/14/health/what-are-pfas-chemicals/index.html (last accessed Mar. 11, 2019)
- 2) U.S. EPA, Per- and Polyfluoroalkyl Substances (PFASs) Under TSCA, <https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/and-polyfluoroalkyl-substances-pfass-under-tsca> (last visited Mar. 8, 2019); Wash. Dep't of Ecology, *Perfluorinated Compounds in Washington Rivers and Lakes* (Aug. 2010) at 9, available at: <https://fortress.wa.gov/ecy/publications/documents/1003034.pdf>
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Drought Planning

River Reliance

Basin Attributes

Prior Efforts

Law of the River

COLORADO RIVER BASIN DROUGHT CONTINGENCY PLAN

REGIONAL PLANS RECEIVE CONGRESSIONAL APPROVAL

Edited/condensed excerpts from various agency sources and Congressional testimony (see Sources, below)

INTRODUCTION

The Southwest's reliance on the Colorado River is hard to overstate — 40 million people, over five million acres of farmland, the economies of seven states and diverse ecosystems and wildlife depend on its water. That reliance is being challenged as climate change, unprecedented drought, and growing demands have caused flows on the Colorado River to drop dramatically and storage levels in the system's two largest reservoirs — Lake Mead and Lake Powell — to do the same. In response, the federal government, states, and urban and agricultural water districts that depend on the Colorado River are working together toward a solution. The result is the Colorado River Basin Drought Contingency Plan — comprised of a collection of proposed agreements within and among the seven western states in the Colorado River Basin. A principal aim of these coordinated plans is to boost storage levels in Lake Mead and Lake Powell and prevent the reservoirs from reaching critically low levels.

On March 19, 2019, the Governors' representatives of the seven Colorado River Basin States (Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming) and key regional water districts formally submitted the Drought Contingency Plan to Congress requesting immediate implementation.

BACKGROUND

The Colorado River Basin covers approximately 246,000 square miles, 97 percent of which are in the United States. It includes the Colorado River and its tributaries, which cross the US border into Mexico before discharging into the Gulf of California. Pursuant to federal law, multiple federal facilities (e.g., dams and reservoirs) store and convey basin waters and generate hydropower for the southwestern United States. The primary federal agency with jurisdiction over the river is the US Bureau of Reclamation (Reclamation), an agency within the US Department of the Interior.

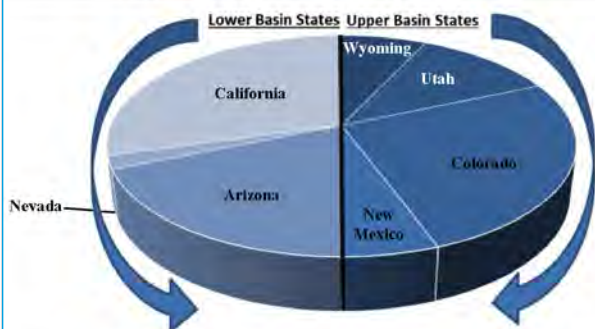
The Drought Contingency Plan builds on and is informed by a number of prior efforts:

- The "2003 Quantification Settlement Agreement" provided that California would reduce its Colorado River water use to adhere to its water allocations under the Law of the River. The Colorado River Compact of 1922 is the foundation of the "Law of the River" — which governs Colorado River water management. Under the Compact, water supplies are divided equally between the Upper Basin and the Lower Basin, with the dividing line at Lee Ferry, Arizona (near the Utah Border). State apportionments were established in agreements approved subsequent to the Compact, and other laws and court decisions have further added to the Law of the River. Pursuant to a 1944 treaty with Mexico, an additional 1.5 million acre feet per year is reserved for flows to Mexico. (See MacDonnell, *TWR* #112).
- The "2007 Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead" included criteria for "balancing" releases between Lakes Powell and Mead and a created a mechanism for storing conserved water in Lake Mead. They also included

a schedule of Lower Basin curtailments in Arizona and Nevada if Lake Mead drops to an elevation of 1,075 feet or less (i.e., a "shortage condition"). As of January 2019, there was a 69 percent chance of a shortage condition beginning in 2020. In the Drought Contingency Plan (DCP) transmittal letter to Congress dated March 19, 2019, representatives of the Basin States noted just how dire the situation was: "Last year's runoff into the Colorado River was the second lowest since 2000, and there is no sign that the trend of extended dry conditions will end any time soon even if 2019 provides above average runoff. Lakes Powell and Mead could reach critically low levels as early as 2021 if conditions do not significantly improve."

- The "Pilot System Conservation Program" was initiated in 2014 as a Reclamation-led effort to provide cost-shared funding for projects to conserve water supplies in the Lower Basin. It was reauthorized by Congress in 2018.

US Colorado River Apportionments by State



Sources: Colorado River Compact of 1922, the Boulder Canyon Project Act, and the Upper Colorado River Basin Compact of 1948.

Notes: Assumes Colorado River Compact apportionment of 15 maf (7.5 maf to each basin). Does not reflect 1.5 maf to Mexico under the Mexican Water Treaty of 1944.

Adapted from CRS Insight: Drought Contingency Plans for the Colorado River (March 26, 2019)

Drought Planning

Historic Drought

Lake Levels

2019 Conditions

Hydrologic Uncertainty

- The 2017 “Minute 323” agreement with Mexico replaced a previous 2012 agreement (Minute 319) with Mexico. It included increased US storage opportunities for Mexico and a binational plan committing Mexico to new delivery curtailments that would go into effect upon approval of the Lower Basin DCP (See Water Briefs, TWR #164).

RECENT COLORADO RIVER BASIN HYDROLOGY

The Colorado River Basin is currently experiencing the worst drought in its recorded history. The period from 2000 through 2018 is the driest 19-year period in over 100 years and one of the driest periods in the 1,200-year paleo-record. By 2018, the fifth driest year on record, the drought resulted in the combined storage of Lake Powell and Lake Mead dropping to approximately 40 percent of capacity — the lowest level since the mid-1960s when Lake Powell was initially filling. Conservation and storage programs developed in the last few years have added approximately 25 feet in elevation to Lake Mead, helping to avert a shortage condition for at least the past four years (2016 through 2019). However, Reclamation analysis conducted in January 2019 indicates the risk of water levels declining to critical elevations at Lakes Powell and Mead, has increased nearly four-fold over the past decade. Critical elevations could be reached as early as 2021.

Hydrology in the upper Colorado River basin, where 92 percent of the total inflow in the Basin originates, appears to be experiencing a modest reprieve in water year 2019. As of March 19, 2019, snowpack in the upper basin is 138 percent of median, one of the highest snowpack totals for this time of year since the drought started, and the forecasted seasonal runoff into Lake Powell is 133 percent of average. [Editor’s Note: The weekly Reclamation report for Lake Mead and Lake Powell levels dated April 1, 2019 showed that Lake Powell’s current storage was 37 percent of full capacity, with 9.049 million acre-feet (maf) at an elevation of 3,569.28 feet above mean sea level. Lake Mead was at 42 percent of full capacity, with 10.878 maf at an elevation of 1,090.24 feet].

While hydrologic conditions in the Basin have improved this year, one year of above average inflow will not end the ongoing, extended drought and does not substantially reduce the risks facing the Basin. In fact, after a robust water year in 2011, the Basin experienced exceptionally low snowpack and flows in 2012 and 2013. Due to hydrologic uncertainty, there is still a possibility that Lakes Powell and Mead decline to critical levels over the next few years.

Supporting the Southwest

Seven states and part of the country of Mexico are dependent on the well-being of the Colorado River. Under the proposed DCP, the Lower Basin states agree to contribute water to keep water levels higher in Lake Mead. The Upper Basin states gain tools, including coordinated reservoir management and water banking, to maintain higher levels in Lake Powell.



Adapted from Metropolitan Water District of Southern California Fact Sheet (March 2019) / www.mwdh2o.com

DROUGHT CONTINGENCY PLANS

In response to ongoing historic drought conditions in the Colorado River Basin, the seven Colorado River Basin States, along with water entitlement holders in the Lower Basin, have developed a set of draft agreements to implement Drought Contingency Plans (DCPs) in the Upper and Lower Basins. The agreements include an Upper Colorado River Basin Drought Contingency Plan (Colorado, New Mexico, Utah, and Wyoming) and a Lower Colorado River Basin Drought Contingency Plan (Arizona, California, and Nevada).

The principal goal of the Colorado River Basin Drought Contingency Plans is to reduce the risk that Colorado River reservoirs, primarily the massive reservoirs of Lake Powell and Mead, decline to critically low elevations. For example, and for context, if Lake Mead were to decline to elevations below 1,020 feet mean sea level, at that point the remaining live storage in Lake Mead would be less than 6 million acre-feet. In a normal year, the Lower Basin States use 7.5 million acre-feet and deliveries to Mexico total 1.5 million acre-feet.

Collectively, proposed drought response actions in the Upper Basin, Lower Basin and Mexico would cut the risk of Colorado River reservoirs reaching critically low elevations by approximately 50 percent.

Upper Colorado River Basin Drought Contingency Plan

The Upper Basin DCP's "Drought Response Operations Agreement" is designed to reduce the risk of reaching critical elevations at Lake Powell and help assure continued compliance with the 1922 Colorado River Compact. The DCP also authorizes storage of conserved water in the Upper Basin that could help establish the foundation for a Demand Management Program that may be developed in the future.

Unlike the Lower Basin, the Upper Basin entered into a Compact to divide its allocation made under the 1922 Compact. The 1948 Upper Colorado River Basin Compact (1948 Compact) not only divides the water between the states, it also establishes the Upper Colorado River Commission (UCRC). The UCRC is composed of commissioners representing each Upper Division State of Colorado, New Mexico, Utah and Wyoming, and a commissioner representing the United States. The 1948 Compact contains provisions regarding the mandatory curtailment of Upper Basin water uses if necessary to comply with obligations under the 1922 Compact. Most specifically, it contains provisions regarding curtailment to satisfy the Upper Basin's obligation not to deplete the flow of the Colorado River at Lee Ferry below 75 million acre feet over a ten year running average. The UCRC has the authority to make findings regarding the necessity for, the extent of, and the timing of curtailment. The individual states determine how curtailment will be implemented within each state. While curtailment has never been necessary, diminishing Colorado River supplies have increased the risk the Upper Basin may need to curtail its uses in the future to satisfy its Compact obligation.

The location of large reservoirs in relation to most Upper Basin water users is also different than in the Lower Basin. Reservoirs like Lake Powell lie downstream of water users. Therefore, any water conserved and stored in those large reservoirs cannot be called on later for use within the Upper Basin. Instead, that water becomes subject to the rules governing the coordinated operations of Lakes Powell and Mead and is ultimately released to the Lower Basin.



Lake Powell Water Loss

A NASA video illustrating the progression of water loss at Lake Powell 1999-2017 is available at: <https://earthobservatory.nasa.gov/world-of-change/LakePowell>

Drought Planning Savings Account

Powell Storage Manipulation

Conserved Water

Conservation Requirements

Operational Details

Lake Mead Shortage Trigger

Lower Basin Contingencies

Even though it lies below Upper Basin water users, Lake Powell is critical to developing and utilizing the Upper Basin's Colorado River apportionment. It acts as the Upper Basin's savings account by storing water in wet years to assure the Upper Basin can meet its Compact obligations in dry years. With the continuing dry conditions, that savings account has become more depleted thereby increasing the risk that Upper Basin uses will need to be curtailed for compact compliance.

Drought Response Operations Agreement

The Drought Response Operations Agreement (DROA) in the Upper Colorado River Basin creates a process to temporarily move water stored in the Colorado River Storage Project (CRSP) "Initial Units" above Lake Powell (Aspinall, Flaming Gorge, and Navajo reservoirs) to Lake Powell if it is projected to approach critical elevations. The purpose of temporarily moving water to Lake Powell is to avoid critical elevations (below elevation 3,525') that threaten compliance with the Colorado River Compact, and hydropower production. DROA creates a process to respond to critical elevations at Lake Powell: if advance forecasting shows that Lake Powell's elevation is approaching a critical elevation, the US Secretary of the Interior will convene representatives of the Upper Basin States to: monitor the forecasts; assess the water needs to avoid reaching critical elevations; and assess the water that may be available from the upstream Initial Units. If forecasted hydrology continues to show levels below a critical elevation, this group will recommend a plan to the Secretary regarding what water releases can be made from the Initial Units to avoid critical elevations, and the Secretary will approve or reject that plan.

Demand Management Storage Agreement

The Demand Management Storage Agreement creates support for each of the four Upper Basin States, working through the Upper Colorado River Commission, to have access to storage capacity in the CRSP Initial Units where they can store conserved water, should the states decide to create Demand Management Storage programs in the Upper Basin. Water conserved under such programs, if developed, would be set aside for meeting the Upper Basin's obligations contained in the Colorado River Compact of 1922 and the Upper Colorado River Compact of 1948.

The Demand Management Storage Agreement contains important safeguards. Before water can be set aside for demand management storage, each respective Upper Basin state must work with its water users to assess conservation opportunities available at facilities within the state and approve its own intrastate voluntary demand management program to conserve water. The Demand Management Storage Agreement does not affect what particular water conservation opportunities may be available in a particular state. Each state must then secure interstate approval for its program throughout the Upper Basin. The States have indicated to Reclamation that available storage for conserved water in the CRSP Initial Units is critical to pursuing discussions to develop these conservation programs because there is no incentive to begin complex discussions on water conservation if there is no place to store conserved water. These discussions are conceptual at this time and specific plans have yet to be negotiated or approved and are likely to take some time to develop.

The States have not identified operational details for a potential Demand Management program and therefore have not defined: how water savings will be determined; how water will be conveyed to CRSP Initial Units; or how much water the States may be able to save. Of the 30,000,000 acre-feet of storage capacity in the Initial Units, the Demand Management Storage Agreement authorizes storage in the Upper Basin up to a maximum of 500,000 acre-feet. Once these details become available, Interior will work with the Upper Basin States, in consultation with the Lower Basin States, to review the technical elements of the anticipated Demand Management Storage Program.

Lower Colorado River Basin Drought Contingency Plan

Due to long-term drought conditions, Lake Mead's elevation has dropped 130 feet since the year 2000. Under the 2007 Interim Guidelines, if Lake Mead's level drops to 1,075 feet — about 15 feet below the current level — an official shortage would be declared. That declaration would trigger cuts in water deliveries to Arizona and Nevada. Further decline in lake levels would have additional, increasingly severe, consequences. If approved, the Lower Basin DCP would help avoid these larger declines and the significant challenges they would bring.

The Lower Basin DCP would require that when Lake Mead reaches predetermined elevations, Lower Basin states would forgo deliveries beyond the levels agreed to in 2007 (and includes for the first time cutbacks for California). It would also further incentivize voluntary conservation of water to be stored in Lake Mead and commit Reclamation to conserving 100,000 acre-feet of water per year to be left in the system. The agreement aims to avoid Lake Mead elevations falling below 1,020 feet.

The Lower Basin DCP is designed to reduce the risks of Lake Mead declining to critical elevations by requiring Arizona, California, and Nevada to contribute additional water to Lake Mead storage at

Drought Planning

Storage Contributions

Storage Incentives

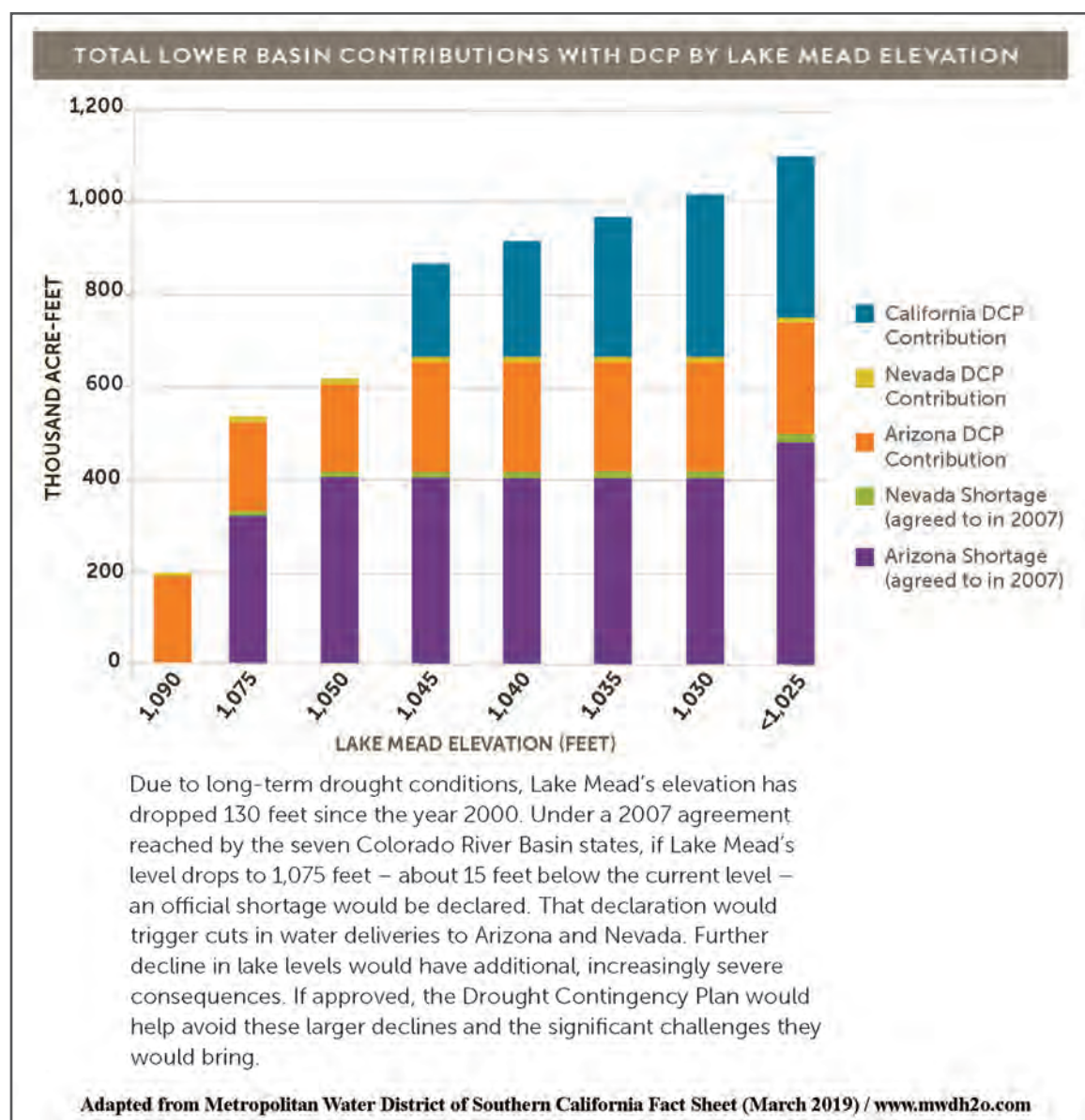
"ICS"

predetermined elevations and creating additional flexibility to incentivize additional voluntary conservation of water to be stored in the lake. These new contributions of water by each Lower Basin State are an overlay and are in addition to the shortage volumes outlined in the 2007 Interim Guidelines. Like the shortage elements of the 2007 Guidelines, new contributions would increase as Lake Mead's elevation declines, providing protection against Lake Mead declining to critically low elevations. The Lower Basin DCP also provides for the potential recovery of contributions later, should Lake Mead conditions improve significantly.

The Lower Basin DCP creates important incentives to encourage water conservation and storage in Lake Mead. New rules allowing flexibility to withdraw previously conserved water from Lake Mead below elevation 1,075 feet will remove disincentives to conserve water when Lake Mead is near those elevations. The Lower Basin DCP also removes incentives to withdraw previously stored water as Lake Mead approaches elevation 1075 feet.

The Lower Basin DCP increases the maximum allowable storage of Intentionally Created Surplus (ICS) for each Lower Basin State to help incentivize creation and long-term storage of ICS. This incentive aims to further bolster Lake Mead's elevation. (For additional information regarding ICS, see Synder & Kowalski, *TWR* #179; Kowalski, *TWR* #107 and Water Briefs, *TWR* #29).

In the Lower Basin, the DCP agreements will be accompanied by intra-state agreements in Arizona and California for each Lower Basin State, and related inter-state agreements among Arizona, California and Nevada, required to implement the DCP.



Drought
Planning

Minute 323

Climate Change

Implementation of a Lower Basin DCP will automatically trigger Mexico's Water Scarcity Contingency Plan as outlined in Section IV of Minute 323 to the 1944 US-Mexico Water Treaty. This agreement, finalized in 2017, provides that Mexico will share proportionally in making additional contributions to Lake Mead at predetermined elevations. Following execution of the Lower Basin DCP in the US, the principal engineers from the US and Mexican Sections of the International Boundary and Water Commission will prepare an engineer's report implementing Mexico's Water Scarcity Contingency Plan.

Conclusion

With Colorado River supplies already over-allocated, climate change is expected to exacerbate the imbalance by further decreasing flows on the Colorado River as temperatures warm.

The agreements to implement the Colorado River Basin DCPs will be signed by the parties upon the passage of the federal legislation and will remain in effect until December 31, 2026 — which is when the 2007 Guidelines expire.

Editors' Note

On April 8, 2019 — as this issue of *The Water Report* went to press — the Colorado River Basin Drought Contingency Plan received Congressional approval.

FOR ADDITIONAL INFORMATION:

The UPPER AND LOWER COLORADO RIVER BASIN DCPs and associated Companion Agreement are available from the RECLAMATION DROUGHT CONTINGENCY PLANS website: www.usbr.gov/dcp/

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Rio Grande Litigation

Renewed Pace

Rio Grande Project

Irrigable Lands

1906 Treaty

1938 Compact

Index Stations

Elephant Butte Reservoir

Upstream Development

Texas v. New Mexico and Colorado

AN UPDATE FROM YEAR SIX IN THE ORIGINAL ACTION

by Richard S. Deitchman and Brittany K. Johnson
Somach Simmons & Dunn (Sacramento, CA)

Introduction

After one year of waiting for the Supreme Court to accept the case, and four years of arguing an ultimately unsuccessful motion to dismiss, the litigation in Original Action No. 141, *Texas v. New Mexico & Colorado*, has picked up the pace. Three states, the federal government, two irrigation districts, and cadre of amici curiae are engaged in written discovery, depositions, and significant motions practice. This article summarizes the litigation to date, including the consequential report from the first Special Master, the parties' positions throughout the briefing, the opinion from the Supreme Court (Court), and the current posture of the case before the second Special Master.

Somach Simmons and Dunn serves as counsel to the State of Texas in *Texas v. New Mexico & Colorado*, No. 141 Original. Accordingly, this article is limited to the public record, and to the extent it offers any commentary on the case, the article represents the personal opinions of the authors.

Background on the Rio Grande

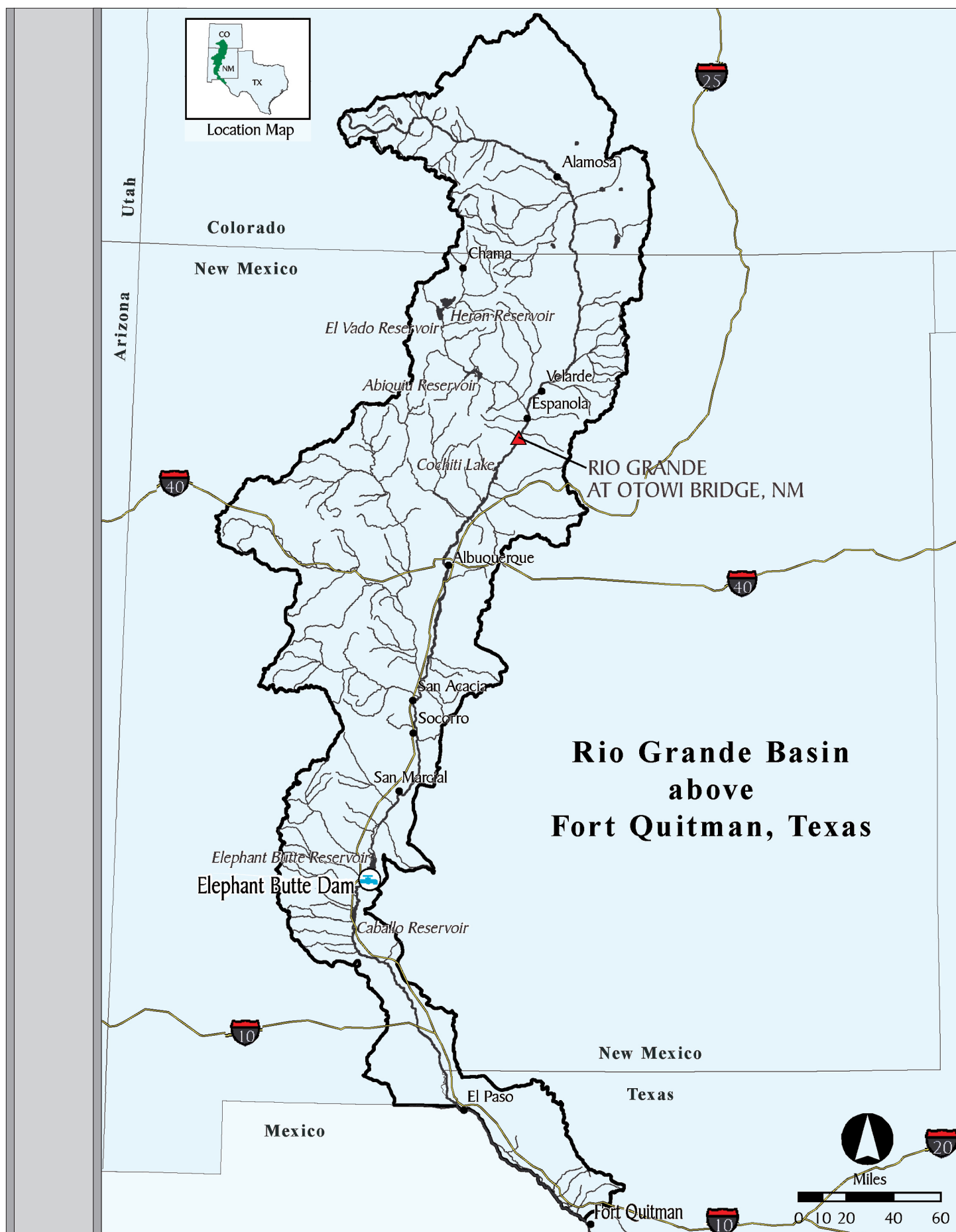
The Rio Grande is an interstate and international river that flows from Colorado, into New Mexico, and then into Texas before reaching the Gulf of New Mexico. Following the enactment of the 1902 Reclamation Act, Congress authorized the construction of a federal reclamation project. The Rio Grande Project (Project) began operating in 1916, storing waters of the Rio Grande in Elephant Butte Reservoir near Engle, New Mexico, approximately 105 miles upstream from the New Mexico-Texas border.

The Project delivers water to irrigable lands in both New Mexico and Texas, and water deliveries from the Project are made based on the ratio of irrigable lands, which historically has been 57% in New Mexico and 43% in Texas. Elephant Butte Irrigation District (EBID), a political subdivision of the State of New Mexico, is the beneficiary of Project water in southern New Mexico. El Paso County Water Improvement District No. 1 (EPCWID), a political subdivision in the State of Texas, is the beneficiary of Project water in Texas. Each district executed contracts with the United States for the delivery of water and repayment of the Project.

Disputes over the Rio Grande between the three states in which it flows, and between the US and Mexico, existed before, during, and after the construction of the Project. These disputes resulted in commissions to study the water supply, which in turn led a number of compromises that control the distribution of the river between the three states as well as the two countries. Under the Convention between the United States and Mexico for the Equitable Distribution of the Water of the Rio Grande (1906 Treaty), the United States must deliver up to 60,000 acre-feet of water annually from the Rio Grande Project to Mexico. The three states negotiated and executed a temporary interstate compact in 1929 to allow for the collection of accurate data and investigation before a final apportionment of the river was reached.

In 1938, Colorado, New Mexico, and Texas executed the final compact (1938 Compact or Compact) that equitably apportioned the waters of the Rio Grande above Fort Quitman, Texas. The 1938 Compact provided for delivery of water based upon flows of water that are measured at various index stations. Colorado must deliver water in the Rio Grande at the Colorado-New Mexico state line according to the schedule of quantities provided in Article III of the 1938 Compact. New Mexico must deliver water in the Rio Grande according to the schedule of quantities provided in Article IV of the 1938 Compact. 1938 Compact, art. IV ("The obligation of New Mexico to deliver water in the Rio Grande at San Marcial... shall be that quantity set forth in the following tabulation of relationship..."). In 1948, the Rio Grande Compact Commission changed the location of measurement of New Mexico's deliveries from San Marcial to Elephant Butte Reservoir. The 1938 Compact did not identify quantities of water below Elephant Butte apportioned to southern New Mexico and Texas.

The 1938 Compact also details a system of credits and debits in the case of over- or under-delivery at the index locations. 1938 Compact, art. VI. Article VII of the Compact protects Texas against the effects of upstream development and prohibits storage in reservoirs construction after 1929 in New Mexico and Colorado when there is less than 400,000 acre-feet of "usable water" in "project storage." Similarly, under Article VIII, Texas can demand of Colorado and New Mexico the release of water from storage in reservoirs constructed after 1929 under certain conditions.



Rio Grande Litigation

Original Jurisdiction

Compact Delivery

1938 Conditions Modified

Flow Deletions

New Mexico Control

US Allegations

Groundwater Pumping

Texas's Complaint and Allegations

The Supreme Court of the United States has exclusive and original jurisdiction over actions among or between states. U.S. Const. art. III, § 2, cl. 2; 28 U.S.C. § 1251(a). The exercise of that jurisdiction, however, is discretionary. As a consequence, a state must petition the Court for permission to file a complaint against another state. *See* Sup. Ct. R. 17. Texas filed its motion for leave to file its Complaint against New Mexico and Colorado in January 2013. (Colorado was named in the Complaint because it is a signatory to the 1938 Compact. Texas is not seeking any relief from Colorado.) The Texas Complaint allegations are summarized as follows.

The Rio Grande Compact did not provide for a specific stateline delivery obligation between New Mexico and Texas. Instead, the 1938 Compact relied upon the Rio Grande Project and its allocation and delivery of water in relation to the proportion of Rio Grande irrigable lands in southern New Mexico and in Texas to provide the basis of the apportionment to Texas. A fundamental purpose of the Rio Grande Compact is to protect the Rio Grande Project and its operations under the conditions that existed in 1938.

In the intervening decades, New Mexico has increasingly allowed the diversion of surface water and the extraction of hydrologically connected groundwater thereby modifying the conditions that existed in 1938. The excess diversion of surface water and hydrologically connected groundwater *downstream* of Elephant Butte Reservoir intercepts tens of thousands of acre-feet that would otherwise have crossed the state line and been available for use in Texas. These extractions create deficits in the tributary underground water, which must be replaced in order for the Project to deliver Rio Grande Project water efficiently. These extractions also result in the depletion of storage at Elephant Butte Reservoir by requiring additional releases in order to allow the Project to operate at the intended efficiency and meet Project demands.

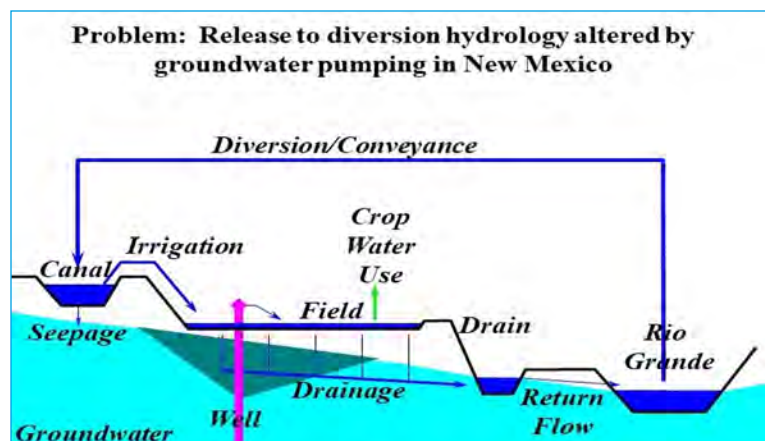
Texas alleges that New Mexico's actions have changed the conditions occurring in 1938 when the Rio Grande was equitably apportioned by Compact. The Compact is predicated on the understanding that water released from Elephant Butte would not be subject to depletion in excess of what existed in 1938. New Mexico's actions have thus reduced Texas's water supplies and the apportionment of water it is entitled to under the Compact.

Texas further alleges that New Mexico has attempted to unilaterally control the operation of the Compact and the Rio Grande Project to the detriment of Texas. Through various legal arguments in pending litigation, New Mexico has taken positions that: (1) Section 8 of the 1902 Reclamation Act requires New Mexico state law to control the apportionment of water to Texas; and (2) New Mexico state court adjudications are the sole means by which Texas can vindicate its rights.

New Mexico opposed Texas's Motion for Leave to File a Complaint. During the briefing, the Court asked the US for its views with respect to Texas's motion. The US responded that the Court should grant Texas's motion, but that it could provide New Mexico leave to file a motion to dismiss the Texas Complaint.

On January 27, 2014, the Court granted Texas's Motion for Leave to File a Complaint and allowed New Mexico to "file a motion to dismiss, in the nature of a motion under Rule 12(b)(6), Federal Rules of Civil Procedure."

Thereafter, in February 2014, the US filed a motion for leave to intervene as a plaintiff and a complaint in intervention. The US also alleges that New Mexico has allowed the diversion of surface water and the pumping of groundwater that is hydrologically connected to the Rio Grande below Elephant Butte by water users that do not have contracts with the US or in excess of contract amounts. The US asserts that the uncapped diversions have had a detrimental effect on Project efficiency, Project storage, and the US' ability to satisfy delivery of water to Mexico. The Court granted the US' motion, over New Mexico's objection, on March 31, 2014.



**Rio Grande
Litigation****Compact
Protections****Reclamation
Law****Irrigation
Districts****Special Master****Special Master's
Report****Legal Standard****"Obligation"
to
Deliver Water****Conclusions****New Mexico's Motion to Dismiss and Districts' Motions to Intervene**

Pursuant to the Court's order, New Mexico filed motions to dismiss both the Texas Complaint and the United States' Complaint in Intervention. New Mexico responded to the Texas allegations by asserting that the 1938 Compact does not impose a stateline delivery obligation on New Mexico and does not impose a duty to protect Project deliveries to the stateline. New Mexico argued that nothing in the 1938 Compact required New Mexico to preserve the 1938 conditions below Elephant Butte Reservoir. Similarly, New Mexico argued that nothing in the 1938 Compact imposes an affirmative duty on New Mexico to prevent interference with Project deliveries.

Finally, New Mexico contended that Texas's and the United States' claims for interference with Project water should be considered in accordance with reclamation law. Under Section 8 of the 1902 Reclamation Act, New Mexico state law governs the enforcement of the Project's water rights, and Reclamation has the ability to seek remedies for interference by junior appropriators in New Mexico state court and specifically in the ongoing adjudication of the Lower Rio Grande.

Subsequent to the filing of the motion to dismiss, the two districts with contracts for water from the Project — EBID and EPCWID — moved to intervene in the litigation. Texas, New Mexico, Colorado, and the US all opposed these intervention motions.

Special Master's Findings and Recommendations

Generally, once the Court grants a motion for leave to file a complaint, it will appoint a special master to act as a trial court. The special master provides recommendations to the Court on how it believes matters before it should be resolved. The parties then file "exceptions" to the report (assuming parties disagree with all or part of the report). The Court then reviews those exceptions and issues its order. The Court may, but does not always, hold oral arguments on the exceptions prior to ruling.

The Court appointed A. Gregory Grimsal, a Louisiana lawyer, to act as Special Master and to provide it with a recommendation on how to resolve the motions to dismiss, to hear all other trial related aspects of the case, and to make recommendations to the Court on the disposition of the case. The Court also referred the motions to intervene to Special Master Grimsal.

Oral argument on the motion to dismiss and motions to intervene was held in New Orleans in August 2015. Special Master Grimsal issued a Draft Report in August 2016, and the final First Interim Report of Special Master, dated February 9, 2017 (First Report), was docketed with the Court on February 13, 2017. The Report was 278 pages long and included appendices and a DVD that contained extensive documentary materials.

Recommendations on the Motion to Dismiss the Texas Complaint

Special Master Grimsal included a lengthy and comprehensive recitation of background information on all aspects of the history of the Rio Grande from the Treaty of Guadalupe Hidalgo in 1848 through the construction of the Project, the development of the different valleys along the river, and ultimately the execution of the 1938 Compact. First Report 32-187. The Special Master also summarized the doctrines of prior appropriation and equitable apportionment. First Report 9-31.

With respect to New Mexico's argument that the Texas Complaint should be dismissed, the Special Master set forth the legal standard for compact interpretation, which draws both from case law on statutory interpretation and contract interpretation. The Special Master also provided the legal standard for motions to dismiss for failure to state a claim under Federal Rule of Civil Procedure 12(b)(6). The Special Master explained that the First Report and recommendation "recounts the relevant legislative and negotiating history in order to give the Compact context. However, nothing detailed [in the First Report] should be construed as fact finding violative of Fed. R. Civ. P. 12, as nothing in the historical record was dispositive regarding the ultimate recommendations of the report." First Report 193. Ultimately, the Special Master recommended that New Mexico's motion to dismiss the Texas Complaint be denied based on the plain language and structure of the 1938 Compact.

The Special Master pointed to the preamble of the 1938 Compact, the definitions found in Article I of the 1938 Compact, the articles creating the accounting system for administration of the river, and the "obligation" to "deliver" water in the plain text of Articles III and IV to support the following conclusions regarding the interpretation of the Compact:

- The Rio Grande Project is wholly incorporated throughout the 1938 Compact.
- "The plain text of Article IV of the Compact requires New Mexico to relinquish control and dominion over the water it deposits in Elephant Butte." First Report 197.
- Based on the "structure and interplay of the articles of the 1938 Compact," the 1938 Compact relies upon the Project, protects water deliveries to the Project, and "also protects the water that is released

Rio Grande Litigation

Compact Interpretation

- from Elephant Butte in order for it to reach its intended destination.” First Report 200.
- Accepting New Mexico’s reading of the 1938 Compact would violate principles of statutory construction. The articles requiring New Mexico to deliver water to the Project according to fixed delivery schedules, measure river flow, calculate debits and credits — as well as the articles protecting Texas’s access to flood waters below Elephant Butte and allowing Texas to demand the release of water from upstream reservoir — “are all void if New Mexico delivers water to the Rio Grande Project at Elephant Butte Reservoir and then immediately grabs it back upon release from the Reservoir.” First Report 201-202. Accepting New Mexico’s reading would also leave Texas’s equitable apportionment unresolved and a source of controversy, defeating the purpose of the Compact.
 - “The equitable apportionment achieved by the 1938 Compact commits the water New Mexico delivers to Elephant Butte Reservoir; that water is not subject to appropriation or distribution under New Mexico state law.” First Report 211.
 - New Mexico “may not divert or intercept water it is required to deliver pursuant to the 1938 Compact to Elephant Butte Reservoir after that water is released from Reservoir by Reclamation for deliveries pursuant to the administration of the Rio Grande Project. That water has been committed by compact to the Rio Grande Project for delivery to Texas, Mexico, and lower New Mexico, and that dedication takes priority over all other appropriations granted by New Mexico.” First Report 213.
- The Special Master recommended that the Court deny New Mexico’s motion to dismiss: “Texas has stated plausible claims for New Mexico’s violation of the 1938 Compact.” First Report 217.

Recommendations on the Motion to Dismiss the United States Complaint

New Mexico also moved to dismiss the US Complaint for failure to state a claim under the terms of the 1938 Compact. New Mexico had argued that the US did not have standing to sue New Mexico for Compact violations. Special Master Grimsal recommended that the Court grant, in part, New Mexico’s motion to dismiss the US Complaint. The Special Master concluded that the US could not bring a Compact claim independent of Texas’s Complaint because it was not a party to the 1938 Compact. Despite the Compact’s incorporation of the federal reclamation Project, the Special Master found that the 1938 Compact does not transform the United States’ claims under reclamation law into claims under the Compact.

The Special Master did, however, recommend that the Court exercise its discretionary jurisdiction pursuant to 28 U.S.C. § 1251(b)(2) to hear the dismissed claims for purposes of judicial economy. Those claims focus on the Rio Grande Project and the law that governs its operations and water rights, including issues associated with an operating agreement for the Project in 2008 executed by the US, EBID, and EPCWID. Further, the Special Master noted that it was “desirable” for the Court to resolve the United States’ claims given the interstate nature of the Project and the United States’ international obligation to deliver Project water to Mexico. First Report 234-236. “Because other sovereigns have significant interests in the resolution of the United States’ Project claims, it would be inappropriate to allow the New Mexico State Engineer to resolve those claims.” First Report 236.

The Special Master also recommended that the Court deny the motions to intervene filed by EBID and EPCWID.

Exceptions to the Special Master’s First Report

Exceptions Related to the Motion to Dismiss the Texas Complaint

Texas filed no exceptions to the Special Master’s First Report. New Mexico “acceded” to the Special Master’s recommendations that its motion to dismiss the Texas Complaint be denied and that its motion to dismiss the US be denied but to allow resolution of the US’ claims under reclamation law. However, New Mexico argued that the Special Master’s reasoning supporting his recommendations was flawed and unnecessary to resolve the motions to dismiss. New Mexico took exception to the different conclusions in the First Report and requested the Court to “disavow” the conclusions and reasoning supporting them, expressly refrain from adopting the Report, affirmatively state that the finding and conclusions are not law of the case, and recommit this case to the Special Master for a complete evaluation of the issues.

Both Colorado and New Mexico took issue with the Special Master’s account of Rio Grande history and background, arguing that the Special Master went beyond the scope necessary to decide a motion to dismiss and made inappropriate factual findings. Colorado also requested that the Court affirmatively abstain from adopting the findings and conclusions on the history of the Rio Grande basin and Compact until the parties could introduce evidence and brief the relevant historical issues.

US’ Standing

Discretionary Jurisdiction

Request to “Disavow” Conclusions

Factual Findings

Rio Grande Litigation

Texas Position

Amicus Curiae City of Las Cruces filed a brief arguing that the Special Master's recommendation should be denied in its entirety but went beyond New Mexico's position, arguing that the motion to dismiss should be granted. Amici New Mexico Pecan Growers, Albuquerque Bernalillo County Utility, and New Mexico State University repeated the substance of New Mexico's argument in their respective briefs.

In its Reply and Sur-Reply, Texas responded by noting that one could not understand the rationale behind the Special Master's recommendations unless one understood the Special Master's analysis, and thus the reasoning supporting the recommendation must be accepted if the recommendation itself was accepted. Texas argued that the Special Master's analysis was thorough and well-reasoned, that the Court should not "disavow" the Report, and that it should form the basis of future action by the Special Master and the Court.

The City of El Paso, EPCWID, and EBID all supported the Texas position. The State of Kansas also filed an amicus brief in support of the Texas position.

Scope of US Complaint

Exceptions Related to the Motion to Dismiss the United States Complaint

The United States filed exceptions to the Special Master's recommendation that its Complaint be dismissed to the extent that it attempted to state a claim under the Compact independent of the Texas Complaint.

New Mexico and Colorado argued that the recommendation should be accepted by the Court and that the US should not be able to sustain a Compact claim independent of Texas. However, they also sought qualifications to the Special Master's recommendation that the case be expanded to deal with Reclamation claims. Colorado added, in its exceptions, that the US should only be able to protect the 1906 Treaty with Mexico in the Supreme Court and nothing else.

Texas supported the position of the US, but also attacked directly the New Mexico contention that Section 8 of the 1902 Reclamation Act had any application in this case. Texas also argued that if the Court did expand the case to deal with Reclamation law issues, those issues should only be addressed after the Compact issues raised by Texas had been resolved.

No Party filed exceptions to the denial of the motions to intervene.

Motions Order

The Court's Orders and Opinion

On October 10, 2017, the Supreme Court Order issued the following order:

Motion of New Mexico to dismiss Texas's complaint is denied. Motion of Elephant Butte Irrigation District for leave to intervene is denied. Motion of El Paso County Water Improvement District No. 1 for leave to intervene is denied...The exception of the United States and the first exception of Colorado to the First Interim Report of the Special Master (Feb. 13, 2017) are set for oral argument in due course.

Texas v. New Mexico, __ U.S. __, 138 S.Ct. 349, 349-50 (2017).

The Court heard oral arguments on the United States exceptions and the first exception of Colorado on January 8, 2018. The Court issued a unanimous opinion authored by Justice Gorsuch on March 5, 2018.

Texas v. New Mexico, __ U.S. __, 128 S.Ct. 954 (2018).

In analyzing the United States' exception that it be allowed to assert Compact claims and Colorado's exception that the United States be permitted to pursue only claims that arise under the 1906 Treaty, the Court explained its unique role in disputes in original jurisdiction cases. The Court may in "this singular sphere, ...regulate and mould the process it uses in such a manner as in its judgment will best promote the purposes of justice." *Id.* at 958 (quotations and citations omitted). Noting this "special" and "unique authority to mold original actions," the Court was persuaded that the US may pursue claims under the Compact in this particular case. *Id.* at 958-59.

The Court explained that the Compact is "inextricably intertwined" with the Project and the contracts with EPCWID and EBID (which the Court labeled "Downstream Contracts") and that the equitable apportionment intended by the Compact can only be achieved through the operation of the Project and the Downstream Contracts. "In this way, the United States might be said to serve, through the Downstream Contracts, as a sort of 'agent' of the Compact, charged with assuring that the Compact's equitable apportionment" to Texas and part of New Mexico "is, in fact, made." *Id.* at 959 (quoting Texas's Reply to Exceptions to the First Interim Report of the Special Master 40). The Court credited the United States' interest in the delivery of water into Elephant Butte, which allows the United States to meet its contractual obligations. The Court also cited New Mexico's admission that "the United States plays an integral role in the Compact's operation." *Id.*

Next, the Court recognized the US' interest in its ability to satisfy treaty obligations, which require the federal government to deliver 60,000 acre-feet each year from Elephant Butte Reservoir to Mexico. New Mexico's failure to perform under the Compact "directly impair[s]" the United States' ability to perform under the 1906 Treaty with Mexico. *Id.* "Permitting the United States to proceed here will allow it to ensure that those obligations are, in fact, honored." *Id.* at 960.

Compact Claims

Project "Intertwined"

Compact Operation

Treaty Obligations

Rio Grande Litigation

Ruling Limited

New Special Master

New Mexico Allegations

The Court was also persuaded by the fact that the US asserted its Compact claims in an existing action, is seeking the same relief, and is proceeding without Texas's objection. Accordingly, the case "does not present the question whether the United States could initiate litigation to force a State to perform its obligations under the Compact or expand the scope of an existing controversy between States." *Id.* at 960. Given the unique nature of the federal interest in the case, the Court ruled to allow the US to pursue its claims under the 1938 Compact but cautioned that "nothing in [the] opinion should be taken to suggest whether a different result would obtain in the absence of any of the considerations [the Court has] outlined or in the presence of additional, countervailing considerations." *Id.* at 960.

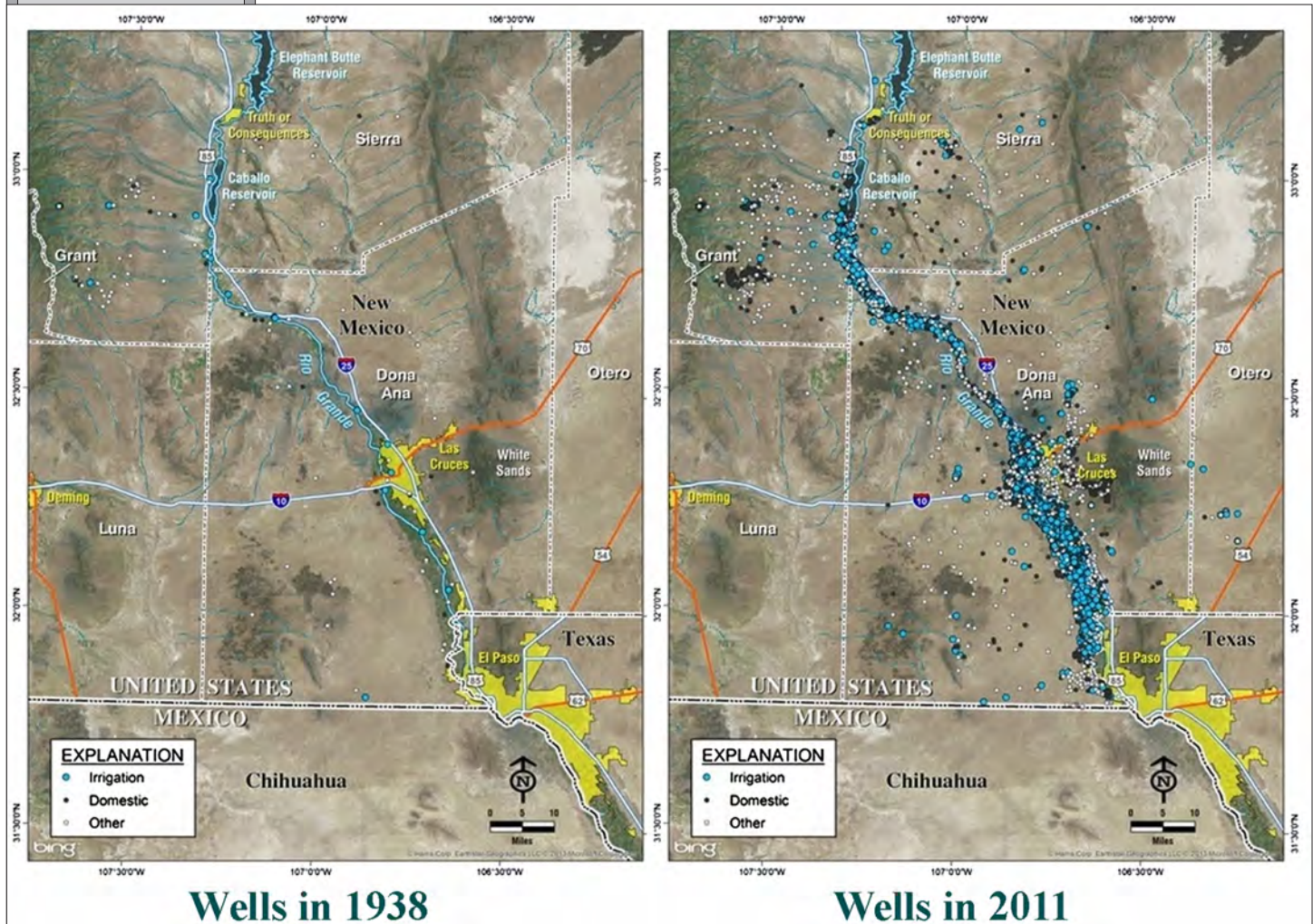
The Court concluded the opinion as follows: "The United States's exception is sustained, all other exceptions are overruled, and the case is remanded to the Special Master for further proceedings consistent with this opinion." *Id.* at 960.

New Special Master Appointed

On April 2, 2018, the Supreme Court issued an order discharging Special Master Grimsal, and appointing the Honorable Michael J. Melloy of Cedar Rapids, Iowa as Special Master. Judge Melloy is presently a Senior United States Circuit Court Judge of the United States Court of Appeals for the Eighth Circuit. The Special Master's docket, which includes all filings with the Special Master since inception of the case, is available at: www.ca8.uscourts.gov/texas-v-new-mexico-and-colorado-no-141-original.

New Mexico's Answer and Counterclaims

In May 2018, New Mexico filed answers to both Texas's Complaint and the United States' Complaint In Intervention. The answers put the case at issue just under five-and-a-half years after Texas sought leave to file its complaint in January 2013. In addition, New Mexico filed counterclaims, including nine of its own claims for relief. Three of the new claims are directed against Texas and/or Texas and the US, and six of the new claims are against the US only. New Mexico filed its counterclaims with the Special Master, and did not seek leave of the Supreme Court to invoke its original jurisdiction, which Texas has asserted renders the counterclaims procedurally improper.



<div data-bbox="126 178 331 268">Rio Grande Litigation</div> <div data-bbox="149 300 310 367">Affirmative Defenses</div> <div data-bbox="129 441 329 472">Counterclaims</div> <div data-bbox="118 720 341 756">Basis for Ruling</div> <div data-bbox="149 999 310 1066">“Law of the Case”</div> <div data-bbox="126 1245 334 1312">Recent Oral Argument</div> <div data-bbox="123 1455 336 1522">Legal Determinations</div> <div data-bbox="142 1871 315 1938">New Mexico Position</div>	<p data-bbox="378 147 1487 363">New Mexico’s answer to Texas’s complaint pleads various affirmative defenses, including: (a) no damages; (b) failure to provide notice; (c) unclean hands; (d) acceptance/waiver/estoppel; (e) laches; (f) failure to mitigate damages; (g) failure to exhaust remedies; (h) set-off; and (i) spill. Several of the affirmative defenses are equitable, and Texas has argued that the Supreme Court generally does not consider such defenses in interstate compact litigation for the reason that compacts are federal law and courts cannot use equitable remedies to contravene the intent of Congress. <i>See New Jersey v. New York</i>, 523 U.S. 767, 810, 811 (1998).</p> <p data-bbox="378 367 1521 615">New Mexico’s counterclaims include alleged Compact violations against both Texas and the US as well as several claims that go beyond Compact issues. The counterclaims include: (a) Compact violation caused by Texas due to unauthorized depletions; (b) interference with the 1938 Compact apportionment against the US; (c) improper release of Compact credit water against the US; (d) Compact violation and unjust enrichment against Texas; (e) violation of the Water Supply Act against the US; (f) improper Compact and Project accounting against the US; (g) violation of the Miscellaneous Purposes of Act against Texas and the US; (h) improper Project maintenance against the US; and (i) failure to enforce the 1906 Treaty with Mexico and Rio Grande Compact violation against the US.</p> <div data-bbox="862 646 1044 674">Recent Motions</div> <p data-bbox="378 678 1526 989">Special Master Melloy set a late 2018 deadline to file motions on the pleadings and also to file motions relating to the doctrine of law of the case or matters previously decided. As to the latter, and as explained above, Special Master Grimsal’s First Report included an exhaustive summary of context regarding western water law, the history of the Rio Grande Project, and the 1938 Compact. But in recommending the denial of New Mexico’s motion to dismiss, Special Master Grimsal relied on only the text and structure of 1938 Compact. Following the Supreme Court’s denial of exceptions to the First Report in March 2018, New Mexico held the position that many of the issues addressed in the First Report were not law of the case, or at least were not decided for purposes of subsequent proceedings. On the other hand, Texas asserted that New Mexico’s exceptions to the First Report were denied, and thus the report constitutes law of the case, or at least includes matters decided for purposes of subsequent proceedings.</p> <p data-bbox="378 993 1526 1241">Generally, a court relies upon “law of the case” principles when its initial decision continues to guide later proceedings in the same case. As the Supreme Court noted in <i>Arizona v. California</i>, 460 U.S. 605, 618 (1983), “the doctrine posits that when a court decides upon a rule of law, that decision should continue to govern the same issues in subsequent stages in the same case.” The law of the case doctrine gives a court discretion to follow prior decision-making, but “does not limit the tribunal’s power.” <i>Id.</i> “In the absence of statute the phrase, law of the case, as applied to the effect of previous orders on the later action of the court rendering them in the same case, merely expresses the practice of courts generally to refuse to reopen what has been decided, not a limit to their power.” <i>Messenger v. Anderson</i>, 225 U.S. 436, 444 (1912).</p> <p data-bbox="378 1245 1492 1333">In order to resolve this dispute and to guide ongoing discovery, Special Master Melloy set a briefing schedule for motions on these issues, which culminated with an April 2, 2019 oral argument in Denver, Colorado. The following briefly describes the parties’ motions and positions on these issues.</p> <div data-bbox="685 1365 1222 1392">Law of the Case or Matters Previously Decided</div> <p data-bbox="378 1396 1508 1862">Texas and New Mexico both filed motions regarding issues previously decided and/or the law of the case doctrine. Texas’s motion asserted that five legal determinations included in the First Report, and undisturbed by the Supreme Court’s consideration of exceptions, constitute law of the case. These include: (1) the Rio Grande Project was fully integrated into the 1938 Compact; (2) the text of the 1938 Compact requires New Mexico to relinquish control and dominion over the water it deposits into Elephant Butte Reservoir; (3) New Mexico through its agents or subdivisions may not divert or intercept water it is required to deliver to Elephant Butte Reservoir pursuant to the 1938 Compact after the water is released from Elephant Butte Reservoir; (4) New Mexico must refrain from post-1938 depletions of water (i.e., depletions that are greater than what occurred in 1938) below Elephant Butte Reservoir; and (5) New Mexico state law plays no role in an interstate dispute. The United States agreed with Texas that the five determinations constitute law of the case. New Mexico’s response in opposition to Texas’s motion primarily argued that the summary denial of its exceptions to the First Report did not constitute an affirmative act on the part of the Supreme Court to adopt the Special Master’s reasoning, and thus the five legal determinations outlined in Texas’s motion do not constitute law of the case, or matters previously decided.</p> <p data-bbox="378 1866 1526 1990">New Mexico filed its own motion on law of the case or matters previously decided and requested that the Special Master affirm eleven determinations. Texas opposed New Mexico’s motion on the grounds that the eleven determinations mostly included factual issues, but the law of the case doctrine applies only to legal issues previously decided. Ultimately, Texas asserted that the meaning of the 1938 Compact is a legal</p>
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Rio Grande Litigation

Compact Interpretation Decided?

issue and there has been substantial litigation on that legal issue since the filing of the Texas Complaint in 2013. The Special Master and the Supreme Court have decided that the 1938 Compact is not ambiguous. Specifically, the Special Master, and ultimately the Supreme Court “discussed and decided” legal questions relating to the interpretation of the 1938 Compact as part of the Special Master’s First Report and in the Supreme Court’s two actions related to New Mexico’s motions. New Mexico’s position on law of the case essentially asks that it may continue to address interpretation of the 1938 Compact, which Texas and the US assert has already been decided. As to several of the factual determinations requested for law of the case consideration in New Mexico’s motion, several might be susceptible for consideration as stipulated facts prior to trial, but the law of the case doctrine applies only to legal determinations, and not factual determinations.

The law of the case motions are presently under submission with Special Master Melloy.

Pleadings Issues

Motions on the Pleadings

Texas and the US both filed motions on the pleadings. Texas filed a three-part motion that included: (a) a motion to strike New Mexico’s counterclaims for failure to seek leave to file them with the Supreme Court; (b) a motion for judgment on the pleadings as to several of New Mexico’s counterclaims because they fail as a matter of law; and (c) a motion for partial summary judgment as to several of New Mexico’s affirmative defenses because they also fail as a matter of law. In the motion to strike, Texas argued that by failing to properly file a motion for leave with its counterclaims, New Mexico ignored the threshold requirement to request that the Court invoke original jurisdiction, and as such, the Special Master lacked jurisdiction to consider each and all of New Mexico’s nine counterclaims. In short, Texas argued that motions for leave allow the Court to exercise its “important gatekeeping function and to ensure that new or additional pleadings do not expand the scope of an existing controversy.” *Nebraska v. Wyoming*, 515 U.S. 1, 8 (1995). Texas explained that New Mexico’s failure to seek the Court’s leave to file its counterclaims effectively stripped the Court of this critical gatekeeping function and placed New Mexico in the position of unilaterally declaring the scope of the Court’s jurisdiction. New Mexico opposed the motion to strike by arguing that the motion for leave to invoke the Court’s original jurisdiction is only required for a complaint and is not required for counterclaims. The consequence of such a rule, however, would be that a defendant state could expand the scope of any original action far beyond the bounds of the original complaint. The motion to strike is presently under submission with Special Master Melloy.

Original Jurisdiction

New Mexico Counterclaims

Alternative to an order striking New Mexico’s counterclaims in their entirety for failure to seek leave of the Court to file, Texas moved for judgment on the pleadings pursuant to Federal Rule of Civil Procedure 12(c), on New Mexico’s Miscellaneous Purposes Act, Water Supply Act, and 2008 Operating Agreement Counterclaims against Texas and the US. Texas argued that the substance of those counterclaims is subject to ongoing litigation initiated by New Mexico in federal district court and therefore outside the scope of the Compact disputes at issue in this case. In addition, Texas asserted that there is no possible cause of action against Texas under the Miscellaneous Purposes Act because Texas is not a party to any Miscellaneous Purpose Act contracts. New Mexico opposed Texas’s motion on the ground that the asserted violations of the Miscellaneous Purposes Act, Water Supply Act, and the 2008 Operating Agreement, impact the Rio Grande Compact apportionment, thus implicating the compact issues.

Affirmative Defenses Challenged

Finally, Texas challenged several of the affirmative defenses (raised in New Mexico’s answer to Texas’s complaint) by way of a motion for partial summary judgment. Texas argued that the following legal bases dispose of three of New Mexico’s equitable affirmative defenses — unclean hands, the trio of acceptance/waiver/estoppel, and laches — and the affirmative defense of failure to exhaust administrative remedies. First, the equitable defenses are not available in interstate compact litigation. In *New Jersey v. New York*, 523 U.S. 767, 810-11 (1998), the Court stated: “...no court may order relief inconsistent with [a compact’s] express terms, no matter what the equities of the circumstances might otherwise invite.” Texas asserted that the Court cannot change an equitable apportionment approved by Congress. Second, Texas argued that New Mexico failed to make any legal argument in opposition to dismissal of the three equitable defenses and does not acknowledge that, for example, the defense of laches has never been applied in interstate water compact litigation and is not available against a sovereign. Finally, Texas argued that the failure to exhaust administrative remedies defense is improper in an original jurisdiction action where the Court has already accepted jurisdiction over the claims. Texas explained that the Court decided the exhaustion issue when it granted Texas’s motion for leave to file the complaint. New Mexico’s affirmative defenses: (1) unclean hands; (2) acceptance/waiver/estoppel; (3) laches; and (4) failure to exhaust administrative remedies each fail as a matter of law. New Mexico’s response largely indicated that discovery might reveal facts that give rise to the challenged affirmative defenses. The Special Master’s decision on the motion for partial summary judgment will determine whether such discovery is needed and/or will be allowed.

Equitable Defenses

Discovery

Rio Grande Litigation

Scope of the Action

The United States filed a motion for judgment on the pleadings in the nature of a Rule 12(c) motion. The United States' motion generally asserted the following grounds to justify dismissal of New Mexico's counterclaims: (a) New Mexico failed to identify any waiver of sovereign immunity that would allow the Court to exercise jurisdiction over New Mexico's claim against the US; (b) New Mexico lacks standing to raise several of its counterclaims, particularly those related to the Rio Grande Project, because it is not itself a beneficiary of the Rio Grande Project; and (c) New Mexico's counterclaims fail to state a claim for relief against the US. Overall, Texas and the US asserted that New Mexico's counterclaims, which expand the scope of the action beyond the Compact issues, are not appropriate for the Supreme Court's original jurisdiction, and should be stricken and/or denied. Special Master Melloy has taken these issues under submission.

Case Management Going Forward

In September 2018, after considering the input from all parties and amici, Special Master Melloy issued a Case Management Plan (CMP). The CMP outlines the procedures for written discovery, depositions, disclosure of experts, deadlines for dispositive motions, and a preliminary window of dates for trial. The Federal Rules of Civil Procedure do not apply in original jurisdiction cases, but may be taken as a guide. Sup. Ct. R. 17.2. The CMP adopts procedures from the Federal Rules of Civil Procedure, with several important modifications to account for the number of parties and amici involved, and phasing of expert report disclosure in order to more efficiently deal with the vast number of experts and issues anticipated by the parties. Subsequent developments, including the recent partial shutdown of the federal government, resulted in the issuance of several amendments to the CMP. Important deadlines set forth in the CMP and the most recent amendments include:

- September 1, 2018: Opening of fact discovery and deadline for initial disclosures (in the nature of FRCP 26 disclosures). This process is complete. This included the parties' initial disclosure of documents, and subsequent service of those documents to an electronic, shared vault.
- May 31, 2019: Disclosure of Plaintiffs' Expert Witnesses and Expert Witness Reports and commencement of depositions of Plaintiffs' Expert witnesses
- October 31, 2019: Disclosure of Defendant's Expert Witnesses and Expert Reports and commencement of depositions of Defendant's Expert witnesses
- December 30, 2019: Disclosure of Plaintiff's Rebuttal Reports
- March 27, 2020: Disclosure of Defendant's Rebuttal Reports
- May 1, 2020: Deadline for completion of discovery
- June 30, 2020: Deadline to file dispositive motions
- March/April 2021: Anticipated trial date

As of April 5, 2019, Texas has noticed and completed over ten depositions of fact witnesses, including representatives of EBID, EPCWID, the State of New Mexico, and others. Many more depositions are set for April and May 2019.

Conclusion

The case remains exceedingly complex. With the upcoming deadlines for expert disclosures, the case will soon involve dozens of expert witnesses. Anticipated rulings from the Special Master may also affect the scope of discovery and issues to be decided during the next phases of litigation. Interstate water disputes are no stranger to a break-neck trial pace (e.g., *Florida v. Georgia*, Original No. 142), or decades-long negotiations (e.g., *Kansas v. Nebraska & Colorado*, Original No. 126). Original No. 141 is gearing up and set for a similar trajectory.

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Rich Deitchman is an attorney based in the Sacramento office of Somach Simmons & Dunn. He is licensed in Oregon and California and focuses his practice on water rights and natural resources, including litigation in state and federal courts. With both a technical and legal background, Rich enjoys the interplay of issues that involve, for example, a water balance computer model and a 1909 water code.

Brittany Johnson is also in the Sacramento office of Somach Simmons & Dunn. Brittany advises water quality and water rights litigation clients in California, Texas, and Arizona. Brittany also works on Endangered Species Act issues and litigation surrounding the Central Valley Project as well as other federal reclamation projects.

WATER BRIEFS

FLINT LIABILITY

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GOVERNOR AS DEFENDANT

On April 1, Judge Judith Levy, a federal district court judge in Ann Arbor, Michigan, ruled that former Governor Rick Snyder could be sued by residents in a class action lawsuit for damages caused by actions he took while in office. The lawsuit seeks damages related to the Flint water crisis. “Plaintiffs, residents and property owners in Flint, Michigan, were exposed to lead, legionella, and other contaminants within the municipal water supply. They allege that defendants, a collection of government officials and private parties, caused or prolonged this exposure, injuring them and damaging their property.” *In re Flint Water Cases. Carthan v. Snyder*, Case No. 16-10444 (April 1, 2019), *Slip Op.* at 1.

Flint residents assert that Governor Snyder violated their right to “bodily integrity” — a right protected by the US Constitution. “In Count I, plaintiffs allege that the government defendants violated their substantive due process right to bodily integrity under the Fourteenth Amendment. (citation omitted) According to plaintiffs, they did this by acting with deliberate indifference to the risk of harm plaintiffs faced, creating and perpetuating their exposure to contaminated water.” *Id.* at 88.

Judge Levy’s order set out the basis for her decision in excruciating detail as part of the 128-page order. “Third, plaintiffs plausibly state that the Governor acted indifferently to the risk of harm they faced, demonstrating a callous disregard for their right to bodily integrity. This indifference manifested itself in two ways. Initially, the Governor was indifferent because instead of mitigating the risk of harm caused by the contaminated water, he covered it up. In private, he worried about the need to return Flint to DWSD water and the political implications of the crisis. But in public, he denied all knowledge, despite being aware of the developing crisis. As a result, plaintiffs were lured into a false sense of security. They could have taken protective measures, if only they had known what the Governor knew. Instead, the Governor misled them into assuming that nothing was wrong. Governor Snyder’s administration even

encouraged them to continue to drink and bathe in the water.” *Id.* at 46.

The Judge then laid out the Governor’s continuing indifference to the risk of harm. “Subsequently, the Governor continued to show indifference to the risk of harm plaintiffs faced. Even once he acknowledged the crisis, he downplayed the risks that plaintiffs faced. By October 2015, the Governor had publicly admitted that the water was contaminated and Flint had returned to DWSD water. Yet the Governor still waited many months to declare a state of emergency. This was despite local area leaders requesting such a declaration as far back as March 2015. Without a state of emergency, plaintiffs were denied valuable resources that could have helped abate the harm that they were still suffering. It is reasonable to infer that the rationale for the delay was in part because the Governor wanted to act as if the issue was resolved. But by downplaying the continuing risk of harm, the Governor undermined efforts to enact protective measures. And as with his initial form of indifference, this led to plaintiffs involuntarily ingesting lead and other contaminants, violating their bodily integrity.” *Id.* at 46-47.

Judge Levy’s order reinstates former Governor Rick Snyder as a defendant in the massive civil lawsuit. Meanwhile on June 14, 2017, in separate actions, five Michigan officials, including the head of the state’s health department, were charged with involuntary manslaughter. Snyder has not been criminally charged.

For info: Judge Levy’s April 1st Order (soon to be posted) and related court documents available at: www.mied.uscourts.gov/ >> Quick Links >> Cases of Interest

RECORD FLOODS

MIDWEST

RECORD MARCH RUNOFF

March runoff in the upper Missouri River Basin above Sioux City, Iowa, was a record 11.0 million acre-feet (MAF), greatly surpassing the previous record of 7.3 MAF set in 1952. The average March upper basin runoff is 2.9 MAF. The Army Corps of Engineers (Corps) runoff forecast increased to 38.2 MAF, which is 151 percent of normal (Corps Press Release, April 3, 2019).

The record high runoff in March

was caused by 2-4 inches of rain falling on heavy plains snowpack causing the snowpack to rapidly melt over frozen, saturated soils in parts of Kansas, Nebraska, Iowa, and South Dakota. Enormous inflows came from every major tributary entering the Missouri River from Fort Randall Dam to the confluence of the Platte and Missouri Rivers, resulting in flooding in the Basin. Pool levels in the four System projects that have significant flood control storage — Fort Peck, Garrison, Oahe and Fort Randall — have all increased significantly to capture much of the runoff. The Corps plans to increase Gavins Point releases to 55,000 cubic feet per second by early next week. Gavins Point releases will be above average for the next several months, and possibly as late as November.

As of April 1, the mountain snowpack was 97 percent of average in the reach above Fort Peck and 93 percent of average in the reach from Fort Peck to Garrison. Normally the mountain snowpack peaks in mid-April. View the mountain snowpack graphic at: www.nwd-mr.usace.army.mil/rcc/reports/snow.pdf.

For info: www.nwd-mr.usace.army.mil/rcc/reports/pdfs/weeklyupdate.pdf

ACQUAVELLA ENDING

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HISTORIC ADJUDICATION

The historic *Ecology v. James Acquavella, et al.* (*Acquavella*) adjudication, which determines and confirms all surface water rights in the Yakima River Basin, will soon be final. The court intends to enter a Final Decree on May 9, 2019 at the Yakima County Courthouse. Also called the Yakima River Basin adjudication, the adjudication began in 1977 when the Washington Department of Ecology (Ecology) filed a petition for an adjudication to determine the legality of all claims for use of surface water in the Yakima River Basin. The case prioritizes about 2,300 water rights in the Yakima Basin including Benton, Kittitas, and Yakima counties, and a small portion of Klickitat County, Washington. See Kray, *TWR* #115 and Water Briefs, *TWRs* #67, #111 and #163 for additional information on *Acquavella*. The final schedule of rights will be available for review

WATER BRIEFS

on Ecology's website, after the Final Decree is entered in court. Information will be mailed to water right holders of the process for obtaining an adjudicated water right certificate.

The adjudication encompasses a watershed supporting the state's top agricultural economy, irrigated by the US Bureau of Reclamation's Yakima Project and five mountain reservoirs. While the case settles old conflicts in the Yakima River Basin, it also should reduce future water disputes, especially among 30 major claimants including cities, irrigation districts, federal entities, and the Yakama Nation. The adjudication has led to more collaborative water management approaches, to protect all water needs. See Malloch & Garrity, *TWR* #106. While the Superior Court's issuance of the final decree is monumental, the activities and relationships built in the courtroom across the years have led to a new way to manage water through the Yakima Basin Integrated Plan. (See <https://ecology.wa.gov/Water-Shorelines/Water-supply/Water-supply-projects-EW/Yakima-River-Basin-projects/Yakima-integrated-plan>).

To establish the priority of surface water rights, the court examined thousands of individual water claims along the 31 tributary watersheds in Kittitas, Yakima, and Benton counties and a segment of Klickitat County. Records and documents spanned more than 150 years of history, and considered the treaty rights of the Yakama Nation. The Yakama Nation has ancestral water rights, which protect instream flows for fish, and irrigation rights on the Wapato Irrigation Project. The federal government also has obligations to meet streamflows for fish in the watershed. These water needs are taken into account within the basin's total water supply. Over the past 42 years, specific legal issues raised by the case have been settled at the state Supreme Court in four separate appeals, establishing important case law precedents.

The *Acquavella* adjudication substantiated nearly 2,300 water rights for individual properties in 31 tributary watersheds ("sub-basins"). As each sub-basin's claims were determined, the court issued conditional final orders. The first conditional final order was

filed in 1989. The conditional final orders for all sub-basins and major claimants will be referenced in the final decree. See Ecology website at: <https://ecology.wa.gov/> >> *Acquavella* adjudication.

For info: Leigh Bedell, Ecology, 360/407-6017 or leigh.bedell@ecy.wa.gov

AQUIFER CAPACITY**CA****AQUIFER LOSS PERMANENT**

A new report released March 19 by the American Geophysical Union (AGU) notes that California's Central Valley aquifer, the major source of groundwater in the region, suffered permanent loss of capacity during the drought experienced in the area from 2012 to 2015. According to new research, the San Joaquin Valley aquifer in the Central Valley shrank permanently by up to 3% due to excess pumping during the sustained dry spell. Combined with the loss from the 2007 to 2009 drought, the aquifer may have lost up to 5% of its storage capacity during the first two decades of the 21st Century. Chandrakanta Ojha, Susanna Werth, Manoochehr Shirzaei, *Groundwater loss and aquifer-system compaction in San Joaquin Valley during 2012-2015 drought*, Journal of Geophysical Research: Solid Earth (2019).

Groundwater exists in the pore spaces between grains of soil and rocks. When fluids are extracted from aquifers, the pore spaces close. There is a range for which these spaces can shrink and expand elastically — but if the pore spaces close too much, they start to collapse, causing the land to shrink irreversibly. Figuring out how much the aquifer shrank permanently could help water managers prepare for future droughts, according to the study's authors. The San Joaquin Valley aquifer supplies freshwater to the Central Valley — a major hub that produces more than 250 different crops valued at \$17 billion per year, according to the US Geological Survey.

The researchers measured water volume changes due to groundwater variation in the aquifer using data from the Gravity Recovery and Climate Experiment (GRACE), a twin satellite mission that has been measuring the Earth's gravity field every month from April 2002 until June 2017. The study

compared the groundwater losses based on GRACE measurements with those calculated from vertical land motion measurements obtained by GPS. Land depressions were also measured by a radar technique called InSAR and multiple extensometers, devices that are installed in a borehole of a groundwater observation well. They also examined groundwater level records.

The study's authors found that from 2012 to 2015, the aquifer of the San Joaquin Valley lost a total volume of about 30 cubic kilometers (7.2 cubic miles) of groundwater. The aquifer also shrank permanently by 0.4% to 3.25%, according to the study. Previous research found the 2007 to 2009 drought caused the San Joaquin aquifer to permanently lose between 0.5% to 2% of its capacity. Cumulatively, the authors said both drought periods — 2007 to 2009 and 2012 to 2015 — caused the San Joaquin aquifer to shrink permanently by as much as 5.25%.

For info: Study available at: <https://doi.org/10.1029/2018JB016083>

WILD & SCENIC RIVERS**US****MAJOR ADDITIONS**

On February 27, the US House of Representatives passed a landmark, bipartisan bill protecting more than 600 miles of Wild and Scenic Rivers and other public lands and waters nationwide. "This is the biggest advancement for river protection that we've seen in nearly a decade," said Bob Irvin, President and CEO of American Rivers.

S. 47, which the Senate passed earlier this month by a vote of 92-8, forever safeguards rivers from Massachusetts to California from new dams and other harmful development. The passage came as the nation marks the 50th Anniversary of the Wild and Scenic Rivers Act. The bill adds the following stretches of river to the National Wild and Scenic Rivers System: 256 miles of the Rogue, Molalla, Nestucca, and Elk rivers in Oregon; 110 miles of the Wood-Pawcatuck rivers in Rhode Island and Connecticut; 76 miles of Amargosa River, Deep Creek, Surprise Canyon and other desert streams in California; 63 miles of the Green River in Utah; 62 miles of the Farmington River and

WATER BRIEFS

Salmon Brook in Connecticut; and 52.8 miles of the Nashua, Squannacook and Nissitissit rivers in Massachusetts and New Hampshire.

The bill included other critical river protection and restoration measures, including:

- Authorization of the Initial Development Phase of the Yakima Basin Integrated Plan, a long-term climate adaptation, water supply reliability, river restoration and lands management plan for farms, fish and people in Washington State;
- Reauthorization of the Land and Water Conservation Fund, the nation's largest and most important conservation program that provides hundreds of millions of dollars annually to secure the purchase and protection of public lands;
- Creation of the Frank and Jeanne Moore Wild Steelhead Sanctuary, protecting steelhead habitat in Oregon's North Umpqua River watershed in honor of Frank Moore, a World War II veteran and his wife, Jeanne, beloved stewards of the river;
- Mineral withdrawals to protect the Yellowstone River in Montana, the Methow River in Washington and the Wild and Scenic Chetco River in Oregon from harmful mining; and
- The long overdue name change for Oregon's Wild and Scenic Whychus Creek.

For info: American Rivers
webpage: www.americanrivers.org/category/wild-and-scenic-rivers/

WATER INFRASTRUCTURE US WIFIA FUNDING

On March 29, US Environmental Protection Agency (EPA) Administrator Andrew Wheeler announced the availability of funding to provide an estimated \$6 billion in Water Infrastructure Finance and Innovation Act (WIFIA) loans in 2019. Funding could leverage \$6 billion in public and private investment for construction-ready projects. "This new round of WIFIA funding provides up to \$6 billion in credit assistance which, combined with other sources, could support \$12 billion in water infrastructure projects and create more than 180,000 jobs. For this round, we are prioritizing construction-ready projects in three

areas: water reuse and recycling, reducing exposure to lead and addressing emerging contaminants, and updating aging infrastructure," said Wheeler.

For info: WIFIA website: www.epa.gov/wifia

ILLEGAL DUMPING CA PRISON SENTENCE & FINE

James Philip Lucero was sentenced on February 25, 2019 to 30 months in prison for the unpermitted discharge of pollutants into waters of the United States, including wetlands, the US Environmental Protection Agency (EPA) announced. United States District Judge Haywood S. Gilliam handed down the sentence.

On February 21, 2018, a federal jury convicted Lucero, 59, of Carmel, California, of violating the federal Clean Water Act. The evidence at trial demonstrated Lucero, a self-described "dirt broker," orchestrated the illegal discharge of pollutants into waters of the United States adjacent to Mowry Slough, part of the Don Edwards San Francisco Bay National Wildlife Refuge located in Newark, California. As a dirt broker, Lucero charged a fee to contractors and trucking companies in exchange for providing open space to dump fill material, including construction debris. The defendant caused approximately 1800 industrial-sized truckloads of construction debris and fill material to be dumped on private property containing federally-protected wetland and other waters of the United States, without applying for or obtaining a permit from the US Army Corps of Engineers or the EPA, or obtaining permission from the landowner.

A federal grand jury handed down a Superseding Indictment on January 31, 2017, charging Lucero with causing dirt, soil, and other materials to be discharged from a point source into waters of the United States, including over ten acres of wetlands and more than an acre of other waters of the United States. Lucero was convicted on all three counts of unpermitted filling of wetlands and tributaries, in violation of 33 U.S.C. §§ 1311, 1319(c)(2)(A), and 1344.

"The tidal marsh at issue in this case is protected under both the Clean

Water Act and Section 10 of the Rivers and Harbors Act of 1899," said Jay M. Green, Special Agent in Charge of EPA's criminal enforcement program in California. "Today's sentence demonstrates that EPA and its law enforcement partners will not tolerate illegal dumping into waters of the United States."

In addition to the prison term, Judge Gilliam ordered Lucero to serve twelve months of supervised release upon his release. A hearing to determine the amount of restitution has been set for May 28th. Judge Gilliam ordered Lucero to surrender and begin serving his sentence on April 22nd. The case was investigated by EPA's Criminal Investigation Division, FBI, the Alameda County District Attorney's Office, and the Newark Police Department. A DOJ litigation team prosecuted the case.

For info: EPA Bulletin: Dec2018-Feb2019 (Sentencings)

COPPER MINE PERMIT AZ LAWSUIT TO OVERTURN

On March 27, four conservation groups filed a lawsuit in federal district court to overturn a key permit for the controversial proposed Rosemont Copper Mine, a large-scale open pit copper mine in the Santa Rita Mountains south of Tucson in southern Arizona. *Save the Scenic Santa Ritas, et al. v. U.S. Army Corps of Engineers, et al.*, Case No. 4:19-cv-00177-JAS (Filed 3/27/19). The lawsuit challenges the US Army Corps' issuance of a Section 404 Clean Water Act permit for the mine. The plaintiffs are the Center for Biological Diversity, Sierra Club, Arizona Mining Reform Coalition, and Save the Scenic Santa Ritas.

The Corps reversed course from a 2016 determination and issued the key permit for the proposed Rosemont Mine. The open-pit copper mine, located in Coronado National Forest, would threaten critical water resources and destroy national forest land, according to the plaintiffs. Their complaint alleges: "The 404 Permit enables Rosemont to construct and operate a mining project that will dump well over a billion tons of mine waste and rock into the waters and adjacent lands of Barrel and Wasp Canyons, permanently

WATER BRIEFS

eliminating these waters and their surrounding riparian areas.” *Complaint* at 2. Huidbay Minerals, Rosemont’s Canadian owner, wants to blast a mile-wide, half-mile-deep open pit in the Santa Rita Mountains and pile toxic mine tailings and waste rock hundreds of feet high in the Davidson Canyon-Cienega Creek watershed, which replenishes Tucson’s groundwater basin, a source for roughly 20% of Tucson’s drinking water.

The “suit challenges the Corps’ failure to comply with mandatory procedural and substantive requirement governing the Corps’ approval of Section 404 permits under the Clean Water Act...; the National Environmental Policy Act...; the Administrative Procedure Act..., and the implementing regulations and policies of these laws.” *Id.* (citations of Acts omitted).

According to the plaintiffs’ press release, the Rosemont Mine would drain the regional aquifer that supports dozens of springs and streams in the area that are home to endangered fish, frogs, snakes, birds, and plants. It would also destroy thousands of acres of federally protected jaguar critical habitat and sever a critically important wildlife corridor essential to the recovery of the northern jaguar population that spans the U.S.-Mexico border. The plaintiffs also assert that the EPA has weighed in against the Rosemont proposal numerous times over a period of several years, saying that the project would violate water-quality standards and was not in the public interest.

Id. at 13. The Corps’ own scientists determined that the permit should be denied, yet the Trump administration reversed course and issued the permit anyway. “Because of these severe impacts, the Los Angeles District of the Corps, which had reviewed the 404 Permit application..., determined in July 2016 that the 404 Permit should be denied due to multiple violations of the CWA and implementing regulations promulgated by the Corps and U.S. Environmental Protection Agency (“EPA”).” *Id.* at 12. See the 94-page *Complaint* for additional details of the plaintiffs’ position.

For info: Complaint available at: www.biologicaldiversity.org/ >> Rosemont Mine

PESTICIDES STUDY

US

NEONICOTINOIDS USE

A new Stroud Water Research Center study, funded by the Prince Albert II of Monaco Foundation, is focusing on the most widely used pesticides worldwide — neonicotinoids. These pesticides aren’t sprayed onto fields. Instead, neonicotinoids are often used to coat seeds before they are planted and are valued as a cost-effective way to protect crops from pests. They are water soluble, and as such, are taken up by the developing plants they are meant to protect from pests. Insects, including pollinators like honeybees, that feed on the crops are exposed to the toxin. Honeybees have been at the center of concerns over neonicotinoid use, and evidence showing indirect effects on multiple other organisms such as birds, bats, and amphibians is growing rapidly.

In April 2018, the European Union widened regulations on these insecticides by completely banning all outdoor uses. Their application in major agricultural crops in the United States remains largely unregulated. Of concern is the fact that recent studies in the US have demonstrated the presence of neonicotinoids in waterways near agricultural areas with increased concentrations associated with rainfall during crop planting. Approximately 95% of a neonicotinoid application washes into soil, streams, lakes, and elsewhere into the surrounding environment.

For info: Diane Huskinson, 610/ 268-2153 x298, dhuskinson@stroudcenter.org or <https://stroudcenter.org/>

DDT IN SNOWMELT

AK

INSECTICIDES RISK

Children in Alaska whose diet includes a lot of fish from rivers fed by the Eastern Alaska Mountain Range may have a long-term elevated risk for cancer because of insecticides — including dichlorodiphenyltrichloroethane (DDT) — in the meltwater. Even with low levels of organochlorine pollutants (OCPs) in glacial meltwater, the risk of cancer for youth and adults who rely on fish as a staple of their diet is above EPA’s threshold limit says Kimberley Miner, research assistant professor at the

University of Maine Climate Change Institute. The risk to children exposed to DDT and hexachlorocyclohexane accumulated in fish is significantly higher than it is for adults because of their size and lifetime exposure.

As Alaskan glaciers melt in the warming climate, Miner says the gradual release of these OCPs may continue to elevate watershed concentrations above the current level. “This secondary impact of climate change will be felt most strongly by children, and needs to be addressed in a comprehensive way,” says Miner, who’s also a research fellow with the Center for Climate and Security and a physical scientist at the Army Geospatial Research Laboratory in Virginia. See K.R. Miner et al. 2018. *Organochlorine pollutants within a polythermal glacier in the Interior Eastern Alaska Range*. Water 10(9):1157. Researchers analyzed Jarvis Glacier ice cores and meltwater collected in summer 2016 and spring 2017.

There are 1,655 families in the larger Yukon interior region and 508 families within the Tanana River watershed. Miner recommends that people who eat large amounts of fish (more than 20 pounds per year or six ounces per week) in these and other Arctic areas be a priority for future research about risks from glacial meltwater pollution. Miner found that health risks from drinking Jarvis Glacier meltwater are negligible for adults and children at this time.

Pesticides that contain OCPs have been banned in many countries because exposure to them has been linked to cancer, coma, tremors, confusion, fatigue, headache, nausea, blurry vision, and death. DDT was used as a pesticide for insect control in the US until EPA banned it in 1972. Hexachlorocyclohexane, commonly called Lindane, has not been produced in the US since 1976, but it is imported for insecticide use and is in prescription creams that combat lice and scabies. OCPs deposited and stored near the surface of Jarvis Glacier in interior Alaska likely were transported there in the atmosphere — attached to snow and rain. In Asia, DDT is still used to prevent malaria.

For info: Study available at: www.mdpi.com/2073-4441/10/9/1157

April 16-17 **OR**

Basic NEPA: The Law, Logic, and Language of The National Environmental Policy Act, Portland. For info: <https://nwetc.org>

April 17 **OR**

EPA Portland Harbor Public Forum, Portland. Portland State University, 6-8:30 pm. With Support from ODEQ and the Community Advisory Group. For info: Laura Knudsen, EPA, 206/ 553-1838 or knudsen.laura@epa.gov

April 18 **CA**

Statewide Municipal Storm Water Permit Reissuance Stakeholder Workshop, Redding. Central Valley Regional Water Quality Control Board Office, 364 Knollcrest Drive, Ste. 205; 9:30 am - 3 pm. Presented by State Water Resources Control Board. For info: Sheena Dhillon, sheena.dhillon@waterboards.ca.gov

April 22 **WA**

Streamflow Restoration Rulemaking Public Open House, Ferndale. Ferndale Library, 2125 Main Street, 1:00 - 3:00 pm. Presented by Dept. of Ecology. For info: Annie Sawabini, Rulemaking Lead, 360/ 407-6878 or <https://ecology.wa.gov/>

April 22 **CA**

Statewide Municipal Storm Water Permit Reissuance Stakeholder Workshop, Rancho Cordova. Central Valley Regional Water Quality Control Board Office, 11020 Sun Center Drive, #200; 9:30 am - 3 pm. Presented by State Water Resources Control Board. For info: Sheena Dhillon, sheena.dhillon@waterboards.ca.gov

April 22 **WA**

Streamflow Restoration Rulemaking Public Open House, Lynden. Lynden Library, 216 4th Street, 6:00 - 8:00 pm. Presented by Dept. of Ecology. For info: Annie Sawabini, Rulemaking Lead, 360/ 407-6878 or <https://ecology.wa.gov/>

April 22-24 **CA**

California Water and Environmental Modeling Forum & Annual Meeting, Folsom. Lake Natoma Inn. For info: <http://cwemf.org/wp/>

April 23 **WA**

Streamflow Restoration Rulemaking Public Open House, Mt. Vernon. Ecology's Padilla Bay Reserve, 10441 Bayview Edison Road, 9:30 - 11:30 am. Presented by Dept. of Ecology. For info: Annie Sawabini, Rulemaking Lead, 360/ 407-6878 or <https://ecology.wa.gov/>

April 23-24 **CA**

P3 Water Summit: Solving Water Challenges Through Partnerships, San Diego. Grand Hyatt. For info: www.p3watersummit.com/home

April 23-25 **SD**

WSWC/U.S. Geological Survey Water Information Management Systems Workshop, Garretson/ Sioux Falls. Earth Resources Observation & Science Center. Presented by Western States Water Council. For info: <http://www.westernstateswater.org/upcoming-meetings/>

April 24-25 **WA**

Washington State Municipal Stormwater Conference, Seattle. Hilton Seattle Airport. WSU, Ecology & Washington Stormwater Center Event. For info: Laurie Larson, 253/ 445-4593 or Laurie.Larson-Pugh@wsu.edu

April 29 **CA**

Statewide Municipal Storm Water Permit Reissuance Stakeholder Workshop, San Diego. San Diego Regional Water Quality Control Board Office, 2375 Northside Drive, 9:30 am - 3:00 pm. Presented by State Water Resources Control Board. For info: Sheena Dhillon, sheena.dhillon@waterboards.ca.gov

April 29-May 1 **CA**

Ceres Sustainability Conference: Business Practices to Address Climate Change, Water Scarcity & Pollution, San Francisco. The Westin St. Francis. For info: www.ceres.org (Events)

May 1 **OR**

Toxics & Risk Assessment Conference: Assessing Risk to Human Health & the Environment, Portland. World Trade Center Two. For info: Environmental Law Education Center, 503/ 282-5220 or www.elecenter.com

May 2-3 **DC & WEB**

Clean Water Act: Law & Regulation 2019 Conference, Washington. Hunton Andrews Kurth LLP, 2200 Pennsylvania Avenue, NW. Presented by the American Law Institute CLE and cosponsored by the Environmental Law Institute. For info: www.ali-cle.org/course/ca014

May 3 **CA**

CEQA in California Seminar, San Francisco. Foundry Square III. For info: Law Seminars International, 206/ 567-4490 or www.lawseminars.com/

May 4 **CA**

Private Enforcement in California - Challenges in the Trump Era, Oakland. Elihu Harris State Building, 1515 Clay Street. Presented by the California Lawyers Assoc. For info: <https://calawyers.org/>

May 9-10 **AZ**

Environmental Law on the Border Conference, Scottsdale. Hilton Scottsdale. For info: CLE Int'l, 800/ 873-7130, live@cle.com or www.cle.com

May 14 **WY**

Wyoming Water Forum: Updates on WACD's Progress Reports & Suitewater Mapping Tool, Cheyenne. WWDOW Conference Room, 6920 Yellowtail Road. Presented by Cathy Rosenthal, Wyoming Assoc. of Conservation Districts. For info: <http://seo.wyo.gov/interstate-streams/water-forum>

May 14-15 **TX**

Environmental Trade Fair & Conference, Austin. Austin Convention Center. Sponsored by Texas Commission on Environmental Quality. For info: www.tceq.texas.gov/p2/events/etfc/etf.html

May 14-15 **NC**

9th Annual US Gas Power Conference: Treatment Technologies, Management & Regulation, Charlotte. Crowne Plaza Charlotte. For info: <https://lmnpower.com> (Conferences)

May 14-15 **NC**

US Power Plant Water Treatment Conference, Charlotte. Crowne Plaza Charlotte. For info: <https://lmnpower.com> (Conferences)

May 17 **OR**

Portland Harbor: Remediation + Revitalization + Redevelopment Conference, Portland. World Trade Center Two. For info: Environmental Law Education Center, 503/ 282-5220 or www.elecenter.com

May 21-23 **ID**

2019 Idaho Reuse & Operators Conference (IROC): Water Reuse, Wastewater, Pretreatment, Laboratory, Collections, Drinking Water & Land Application, Boise. The Riverside Hotel. Presented by Pacific Northwest Water Reuse Assoc., Idaho Operators Conference & Idaho Dept. of Environmental Quality. For info: <http://www.deq.idaho.gov/2019-water-reuse-conference>



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CALENDAR

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May 29-30 **WA**

Washington State Brownfields Conference, Spokane.

DoubleTree by Spokane City Center. Presented by WA Dept. of Ecology & Northwest Environmental Business Council. For info: <https://ecology.wa.gov/Brownfields-Conference>

May 29-31 **MT**

19th Institute for Natural Resources Law Teachers, Missoula. DoubleTree by Hilton Hotel Missoula-Edgewater. Presented by Rocky Mountain Mineral Law Foundation. For info: www.rmmlf.org/

June 5-7 **India**

World Environment Conference & Expo: Exhibition, Conference & Awards, New Delhi. Pragati Maidan. For info: www.worldenvironment.in

June 6-7 **CO**

Charting a Better Course for the Colorado River: Identifying the Data & Concepts to Shape the Interim Guidelines Renegotiation - 2019 Getches-Wilkinson Center Summer Conference, Boulder. University of Colorado, Wolf Law Building. For info: www.getches-wilkinsoncenter.cu.law/events/2019-gwc-summer-conference/

June 9-12 **CO**

"Innovating for the Future of Water"- New Technologies & Water Sector Innovations: ACE19-American Water Works Association Annual Conference, Denver. Colorado Conference Center. For info: <https://events.awwa.org>

June 11 **CO**

2019 Annual RiverBank Celebration - Colorado Water Trust Gathering, Denver. Denver Botanic Gardens, 1007 York Street, 5:30 - 8:30 pm. For info: www.ColoradoWaterTrust.org/

June 13-14 **CA**

Land Use Law Conference, San Francisco. BASF Conference Center. For info: CLE Int'l, 800/873-7130, live@cle.com or www.cle.com

June 13-14 **WA**

Energy Storage Seminar, Seattle. 1201 Third Avenue Building. For info: Law Seminars International, 206/ 567-4490 or www.lawseminars.com/

June 16-19 **NV**

2019 AWRA Summer Specialty Conference - Improving Water Infrastructure Through Resilient Adaptation, Sparks. Nugget Casino Resort. Presented by American Water Resources Association. For info: www.awra.org

June 19 **OR**

Managing Stormwater in Oregon Conference, Salem. Salem Convention Center. Northwest Environmental Business Council (NEBC) Event. For info: www.nebc.org

June 26 **TX**

Dam Safety Workshop, Conroe. Lone Star Convention & Expo Center, 9055 Airport Road. Presented by TCEQ. For info: www.tceq.texas.gov/p2/events/dam-safety.html